THE social effects of Informa-tion technology will be the theme of a conference at the Snuth Bank Polytechnic next week, at which Energy Minister rony Benn will be the keynote peaker.

The Polytechnic is making
The Polytechnic is making week, at which Energy Minister Tony Benn will be the keynote

available facilities for the use of working groups that might develop from the cunference to study some activitles in more detail. Further information from Sean McConnell at the Department of Town Planning, the Polyteclinic of the South Bank. Wandsworth Road, London SW8 2JZ, Tel: 01-928 8989.

US may sue IBM

IBM could be taken to court in the spring by the US government for allegedly making "excessive" profits on leasing computer equipment to government agencies in 1960 and 1970. The charges have been made by the US government's Renegotiation Board, and IBM has said that it will contest the board's findings and will take the matter to the Federal Court of Claims if

### Futuredata talks

ICROPROCESSOR development systems builder Futuredata Compiner Corp of Los Angeles looks like being acquired hy Genkad, the lest equipment manufacturer. Genkad hns agreed in principle to buy Futuredata, which makes the Zilog Z80-hased Microsystem family. Microsystems can also support Motoroin 6800 and Intel 8080 processors (CW, December

Anglia office of the Health and computer for enalysia. Safety Executive, which admin-NEWS IN BRIEF ISE minicomputer network. The original proposal included

the installation of a number of minis via which information

joint venture to manufacture

Plato computer terminals in Iran

(CW, November 9), is uncertain

following the protracted political

lurmoll there. All the 30 or so

unn-Iranian employers of the company, mainly working on

sales and leasing, have been

evacuated, but six are to return

once the climate improves.

Computer Terminals of Iran,

which is 30% owned by CDC, is

Honeywell's employees work-

liouse is to launch its own view-

data service alongside the one

offered by the Dutch PTT. But

the publishing house, VNU, has

developed its plans in close co-

operation with the PTT, and the

two systems may be linked to

give users access to information

The systam will be set up and

ruu in conjunction with two UK

companies, Insac and Applied

Viewdata Systems, and based on

a British GEC 4080 computer, as

is the UK Post Office's viewdata

Viewdata Systams, as part of an

existing subsidiary, intermedi-

To handle ell nanecta of its

slored on both.

service, Prestei.

staffed by Iranians.

Health and Safety mini network revised acheme carried out at the East tors would be fed into a central was required.

laters the inspection of poten- references and other compar- CCA spokesman, "but the extially hazardous industrial sites, isons to be made easily and pected start-up date is still the Central Computer Agency is would make it posable to detect revising its specificationa for an when special visits abould be health and safety reporta from inspectors.

However, the pllot scheme

THE future of Control Date's ing with Isiran, the company Dallas has eancelled a contract

which markets Series 60 com-

trols office in Teheran is

reported to be still in business. It

is staffed by Europeans and Ira-

Univac'a employees have

remained in Iran, but the com-

pany has abelved plans to build

the V77 minicomputer there

Electronic Data Systems of

Independent Dutch viewdata service

A MAJOR Duteli publishing air, which represents the US closed user groups, one of which

land and circulates u weekly

publication to 20,000 graduates.

offer Careerdata in the Dutch

speaking countries, which it will

do under an agreement with

Applied Viewdnta Systems of

London, which developed it for

from the industrial educational,

use on Prestel

interest in viewdata, VNU has set up a subsidiary, Toegepaste Vlewdata Systems of Toegepaste

TVS is therefore well placed to

(CW, July 13, 1978).

puters in Iran, have opted to Health and Social Welfare for

government's National Techni- will be the parent company

cal Information Service in Hol itself, VNU, which comprises

Further activities by TVS in Initially, expending to 200 or

viewdata will include providing more as the need develops.

IN a competition aimed at en- Schoeters, the Finnncial Times;

to the judging panel by Monday, April 30; will be evaluated on SYSTEMS and software house

their originality, enterprise end. Marcol is to buy back the 25%

the Computing Services society in 1976 (CW, July I, Association; Reg Boot, National 1976). Shares will be transferred

Computing Centre; Geoff Dale, the Post Office; John McNulty, Moduler Techology; Ted to key executive as well as those who have been with the company for two or more years.

couroging potential authors and Alnn Wood, IDPM.

stay, and the company's con-

**CDC** evacuates

"No tendera for equipment January 1981:

Commenting on the prospect made to a fectory on the basis of of using the system, an HSE operational, the network will enable us to provide e national

with the Irenian Ministry of

The contract, which was due

to run from October 1978 to

November 1979, was worth up to

\$20.5 million, but was termin-

ated when arrears on payments

from the Ministry reached \$5

million. The company hopes to

resume work if it can get

clarification on the Ministry's

intentions, and payment of

publishing companies all over

Holland. TVS also offers enn-

sultancy in how to use viewdata.

and will organise applications seminars and publish a newslet-

The system will be installed in

the group's headquarters at

Hanrlem, nenr Amsterdam, in

March and will support 32 ports

Winning entries will be

published in Computer Weekly,

publishes the Current Aspects of

will produce a special edition

Further information and entry

forma cen be obtained from:

stitute of Data Processing

Management, 12-13 Henriatta

Street, London, WC2 8NU.

Share transfer

stake in the company taken by the Norwich Union insurance

ATLANTIC

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OR LEASE

featuring the best entries.

attempting to provide more and This would allow cross- have yet been made," said a more of its guidance material to employers in the form of Prestel

"pages". The HSL helieves that it is an "essential tool with which we are breaking new ground. It will spokesman sald, "When it is make It much easier for employers to comply with the Health and Safety Act."



THE mon picked to hand the GEC-Fetrehild comiconductur venture in the UK le Dovid Mor-

Morrlott, 44, a native of Northeinplon, wont to the US in 1982 and joined Foirchild in 1865. He has served as general menagor of European opnrotions mul as menener of the diode plant at Son Rafnol, California. He boosmo a vice-

He was elected mannging company's first board mostly lost month, but the nomes of the

# **Head of GEC** Fairchild

riott, who is giving up his post os a Feirchild vico-president to take up the position.

president in 1874.

director of GEC-Feirchild at the other board members have not

• Foircuild is to poy \$27 million for Mertin Meriotte's 20 % steke in US terminal membracturor Bunkor Romo, ps o elop towards full scquialtion. Bunko Ramo terminals are markated in the UK by GEC's major con-

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Chance to

debate

privacy

proposals

THE first public discussion d

the Data Protection Con-

mittee's final proposals will take

place at the conference on pa-vacy at the Reinhrandt Hold

Kuightsbridge, on Jaunary h

The Home Secretary, Merba

Reces, and Liberal leader David

Steel will address the con-

ference, along with manyof the

leading figures in the field in the UK and abroad.

of the DPC, will chair the feet

morning of the conference, and

annoug the other speakers will

he Christopher Layton from the

Elic. Kerstin Amer from

Swerlen, Darrie Sherman of the

union ASTMS, and Professor

Alam Westin of Culumbia Un-

sist of five workshops remain

concurrently, covering the DPC

report itself; computers, privacy

and cost; employment records

and references; medical and

speint work records; and police

The second day will cover the

international situation, and will

end with a panel discussion in-

culving, among others, two

members of the DPC, Paul

The conference is being spor-soreri by the National Council

for Civil Libertles, the NCC, and

To register, contact the NCCL

Sieghart and Charles Read.

The first afternoon will con-

versity, New York.

recurds.

the IDPM.

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Sir Norman Lindop, chalman

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# Super power systems

DETAILS of two new supercrequiers, more powerful than anything hitherto produced, oppeared this week.

Control Data will announce the Cyber 203, derived from the 1mi million instruction per second Star 100, next week, while Goodyear is to build the world's most powerful parallel processor. The latter muchine, called a Massively Parallel Processor. MPP, is being built to process data from satellites for NASA and will have 16,384 processing elements and be rated at

### TUC strategy

THE Prime Minister, and TUC General Secretary Len Murray are among the speakers set for the TUC Industrial Strategy Conterence for Electronics, to be held sext week Tiver 456 union delegates have been invited to the conference, which will annuto promote the industrial strategy

### Seven paid off SEVEN contract analysis and

programmers at Abillard, Southampton, have been given 28 days' notice following termination of in-house projects on FOLLOWING the asia of Iwo Paalt minis as a prefude to nucrocomputer cystems to the Chinese during Vice-Premier Wang Chen's vielt to the UK in November, Abacca Computers of London is now negotioting a transfer of the work to newer Philips hardware. The seven want compensation for early ending of their three to 12 month or London is now negotioling a contract to aupply furthar agulpment, software end training to the Chinese govern-ment's Contral Research Incomracts but Philips says its action is within the contract

#### IBM sales boom

OUTRIGHT sales at IBM reached unprecedented levels in the fourth quarter of 1978, bringing the company record turnover and profit figures. Net profit rose 14.5% to \$3,111 million on turnover up 16% at \$4,076 million. Fourth quarter profits stormed through the billion dol lar burrier for the first time, up 27% at \$1,015 million on turnover also up 27%. -

### £1m investment

AN investment of £1 million, plus £250,000 from the Scottish Development Authority, is to be made by Honeywell Control. Systems in its Newhouse, Scot land, facility. The money will be systems, including the TDC 2000 range, and a new microprocessor-based system known as DCP7700. Full story. page II.

### Maths inquiry

THE Committee of Inquiry into the Teaching of Mathematics in Schools has called for evidence The potential impact of the inicia subject. It is particularly concerned about the basic computation skills of childran, the mathematica required for employment, and the mathematical demands made on adults in dally life. Written evidence should be sent to the DES at

### Row over CBE for ICL S. Africa boss 11 FOR his services to UK exports, John Starkey, the From his service as a navigotor in the RAF's

manne mons becomes Plessey, growing sentices die for opera-

Telecommunications and Office - from in the worn: a Greanoment

Systems, and the Communicas - Tive years age, Comover was

tions and Data Systems division about £2 million with Total of

becomes Plessey Office Systems. That are exports. This year it is:

The automicement of the expected to be ser £12 million

reorganisation buts the Plessey - with over 50% as exports, tin-

spotlight on the office market as a paper the diversor is understood.

for Phenox, semicondex for construction of a two parties

could also be a beneficiary of the cover a chainer been dramatic. Can-

The division has often been. Some estimates put invest-

maker, though sources close to at about £10 million over the last

1991, to be to comain probable

year it was around 72%.

awarded a CBE. Comment on the award from the Anti-

Apartheld Movement and unions was stern. Mike Terry, executive secretary of the AAM, said, "This award is clearly very misguided. By its action, the Brilish gouernment has identified with ICL's and then in 1972 to his appointment as managing activities in South Africa in strengthening and supporting apartheld there."

ini Webb, national officer for ASTMS, added "It is regrettable that anyone actively involved and based in South Africa under apartheld should

Plessey has taken the in a steps

to a major commitment to the

ADACUS

follows am

China deal

Abocus managing director

Derek Rowe would not specify the menufacturers of the hard

ware involved in the initial fivo

figure selo. It includes American processors and floppy disc drives with British VDUs and an

ANSI 74 Fortran compiler write

ten by Abscus.
The systems wont to Chine

on the same plone es the retur-ning delogistion, which had algued a sechnology co-

perotion spreement with the

55-year-old manager of ICL South Africa, has been awarded a CBE.

Bumber Command during the war, Starkey progressed through Powers-Samas as a salesman specialising in local government and the public utilities sector, to sales manager of ICL South Africa in 1969. This position he held until 1971 when he moved up to the position of cales director director of ICL South Africa

A second IC), man, Roger Horbert, director of the company's European division and based in France, has been awarded an honorary CBF, for his services to Auglo French trade. He has been with



# cash for new growth

2142% stake in ICI last week. April 1. Plessey Telecome ston is possing the fastest. Plessey's often reported cach Junuations have bel to speculamonthat the division's problems

care brilliarily concerned with thrancing continued growth ar His uidiratey limer have here Ples agy's confirmation that Talks on some form of joint year-Ture, with General Instruments and tell training other com-

A Saes have been held point to the obvious way in which the growth could be maintained The ICL share safe could be to runnouted to be a heavy loss ment by Plessey in the division

the company dispute these three years, but there is still 8 Turn to Page 16

this rate.

# Gareth Jones to be editor of CW A JOURNALIST well-known to

eny socios el lhe compute udustry, Garoth Jones, has hoos repainted Editor of Com-poter Weehly in succession to Mahadin Pellu, who is briving The paper early next mouth

Janus, 30, onlared the com-

pulor industry to 1974 after graduating in physics at the University College of North Walos. He spent two years as i programmor/analysi wali ICI working on Computer-apled Namyn problems of Kidsgrovii

In 1972 be joined the uditorial statt of the journal Company Antest Design, published by IPC Science and ochnology Press Suce their he has home orsponsible he she himich of several paraid, in cluding Micropiocussors and Microsystems, Computer Com noncenture and Information

forther strengthened by his work as a committee monter of the British Computer Secrety s CAB and Display Specialist

to addition, be has inquared series of succensial international conferences on CAII mid has played on active part in the development of the annual Microsystonis conforunte ami

to linance the semiconductor

# IBM gives Series 1 a boost

event driven executive to the status of a fully-supported IBM produci.

Fortrau IV compiler and runstatus of this executive is regarded by users as of particular significance.

UK government and visited tCL emengst other companies (CW, November 23, 1878). Abeque has morketing ager cise for Ohio Solentille, Com-80% of live Series I users on the pucolor and Taxos Electronics Absong TE dish page 16.

EDX will be enhanced with a There are also two new medium capacity disc drives, an ASCII

which last year formed a Series; US West Coaat. "It executes I division A spokesman pointed very well and is alan easy to in particular to the low cost of install. However, the fact that it memory mai memory and particular is enabling sectures a high-leval end-user. 328 to be added for \$250 He said. that Gamma would be supporting EDX in addition to its COS/I Cnbn) system.

Cheaper memory may help to soothe users anxious about the performance and resource requirements of some of IBM's software for the Series 1, notably the RPS operating system and ts PL/I compiler. Early releases of the PL/1

Early releases of the Pl.11 software were notably core hungry and the need for frequent overlays slowed completion dramatically. However, considerable improvements sometimes by as much as tenfold were reported by those installing extra pore and the associated address translator.

### orders for the machine, and the much more contiously than in honeymoon is over 100 in the the eighoric early days.

AIMED at overcoming some language and is macro driven cut back severely on original lopment projects on the system user criticisms of early releases makes it anothema to some DP of its Series 1 mini, IBM has professionals", said the user. announced a number of hardware enhancements to the sysware enhancements to the sysware enhancements to the sysware enhancements to the sysware enhancements to the syswho report approaching devepage 5. tem and is elevnting the EDX compact low cost processor including a CPU and up to 64K words of memory on a single 9in hy 7in board costing £3.797.

time library and the increase in programmable multi-line coms adapter, an ettachment of the System 34 5250 display terminal, and a new family of tape drives. According to one large UK Among those welcoming the

user, EDX necounts for about enhancements was Gamma.

It L sale

everybody, but despite these pro-blems, Computer Weekly presents its usual up-to-the-minute nows and views of all things computer.

### VIEWDATA POWER

The potential impact of the micro the public may be able to make use of the new service. Page 4

### terview on the staff

famine Focus on living with computers flow to technology Juniorytew of BC6 79
Gilb's Mythology Puzzler Software File Op Spot Micro News Migrae for the LEA People in the News Honeywell's £1m in Scotland turn-about Letters to the Editor

Lexistron. The world processor that even The word LEXITRON.



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## land, facility. The money will be used to establish a new produc-MUSIDE THIS WEEKS CW..... The lorry drivers' dispute has gut your paper supplies in hexord, and the reli strike has hit virtually

o mako use Sales Bit Page 4 Post Office parity strike

JOB VACANCIES: PAGES 19-63

associated address translator translent support.

The price cuts and for theoming RPS and PLVI enhalt comming reported customers. At least one UK user is understood to have

processor that even



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commercial and public sectors, the Institute of Data Processing and Input Two-Nina, which Telophone: 91-304 8328 Management and Langton in-Teles: 898138 formation Systems have organ- Computer Technology series, CRANFIELD COMPUTER SERVICES laed an essay competition on The Practical Implications of Distributing Computer Power."

The essaye, to be of between 2,000 and 3,000 words, may IDPM/Langton Award, In-WELLING, KENT DA 16 18J CRANFIELO is a company offering a loss range of supplies to the computer user the problems of the aubject. A first prize of £300 and additional cash awarda will ba given, and entries, which must be delivered

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Computer Weekly has a circulation each week of ever \$2,000 including the highest fully requested circulation in the UK. The Later of Legal and Outlon, which is sublished 1001mos a year, has a circu ion of aver 94,000.

British Computer Society event BCS 79 (CW. January 11), Living

with Computing la a matter of washing machines, electronic

casinos, micro robots, badges, stickers and halloons. Potantial

recruits into the computer in-

dustry could wall believe they

were entering a comic-strip

was noticeably absent from the

proceedings. Amid the heavily

represented academies of

learning, the NCC appeared to be sharing a stand with NCR,

and the police with Exeter

Health Centre. Interfacing with a model railway train, ICL fea-

tured The Junior Computer

When it comes to careera in

DP, even the BCS themselvea

have doubts. One career leaflet

ends by mentioning that there

are opportunities for systems

personnel to transfer out of the

The reel world of computing

# TOTAL OTHER TO CHIEF E, SECTIONEY TO, 1919

WHILE the UK is poised on the brink of yet another abyss, computing ataff can be comforted by the embracing warinth of the reams of newsprint in the computer Press devoted to job

For most of the under-30s in the computer industry there will not even be the slightly chilling memory of the brief crisis in our Industry in the early Seventies when some computing staff tasted the bitter pill of unem-

With applications for comouter acience courses up almost 50% this year, the message that there is a lucrative and intaresting industry with high employment has obviously worked its way through to careers officers and aixth formers.

According to BCS president Profesaor Frank Sumner, speaking at the recent BCS 79 conference, despite the growth universities and polys could "not expand fast enough to meet the demands for skilled staff."

Currently only about 1,400 computing science graduates are produced every year and this is insufficient to cope with the annual graduate requirements of the computing aervice in-However, Professor Sumner

aid he believed the upsurge in Interest in computing would lead to the production of higher

Away from the real world

Threshold team.

hardly encouraging. However, the show did con-

lain some surprises, aparl from

the noteble absence of the NCC

Rather overlooked was an

attempt to display how DP per-

sonnel live with compulera. But

had the organisers approached

stallation could have been

created. This would have fea-

tured harassed DP management,

aggreaalve users, limited

budgets and time, assorted en-

gineers, hardware and head-

For the DPM, living with

computers la seldom a joke.

Technology has to be master-

minded - slot machines being

very much limited to coffee,

robots to the data prep section

and competitions to the weekly

CW Puzzler. A atructural walk-

through at the exhibition in no

way comparea with the real

the IDPM, a very realistic in-

ACCORDING to the recent computer service function -

# Will the computer staff famine ever end?

obs boom could hit the oldest

young who are schooled in the

Cobol programmer, despite the

variations on a standards theme.

Business systems analysts and

high-level language applications

lble to this kind of technological

However, and here beginneth the second lesson of this

editorial, there is a growing

realisation that applications systems and acitware work is far

from being the specialist craft

It is now a trulsm in the com-

puter community that there are

too many badly implemented

systems because the implemen-

tors knew more about the com-

we have been led to believe.

ogrammers are less suscapt-

new ayatem. Despite the allly reason - that computing

computer professional, there- down of some of the myths of

fore any let-up in the current computing will increase the

newest technology applies pri- new talent, together with an

marily to the aystems software awareness among employers

and operations field. Once a that the sources of potential

Cobol programmer, always a staff must be expanded, will

supply of available stoff.

f the surplus jobs.

All this means that the current

glut of computer jobs is likely to have a limit and the fresh flow of

eventually begin to sop up some

There is no realiatic way of

predicting the timescale for the

ending of the jobs boom but it is

clear that the end is coming into

this is too speculative, harken to the words of David Firnberg,

director of the National Com-

puting Centre (CW, January 11)

who pointed out that in Finland

thare was a computer staff

ahoriage three years ago but he

was told last year that there was

now a surplus of staff. And In

France there are also many un-

employed computer professio-

comfortable ride on the com-

puter gravy train should begin thinking about the future. A fu-

ture where, perhaps, the track

record of programmers analysts

and operators in producing and

running good, relinble and

effective computer systems will

become a sleve to eliminate

Notes, page 7).

digital

digital

Those who have enjoyed a

And if you feel the worning of

availability of meny jobs for the was not for them. The breaking

quality computer science gradu- unlearning before learning the at school" - or some equally

ates.
And therein lies the first lesson and the first warning of this Computerview. As Professor Sumner expreased it, "Anyone under 35 in the computer business will have to look warily over their shoulders because thare will be an awful lot of good

The 3,800 children who packed the BCS 79 Fun Fair (CW, January il) provided a vivid illustration of the seriousness of this warning.

It ia particularly relevant in computing technology because there is such a quick deexpertising of people as the technology changes. Those, for example, who grew up with the ICL 1900 in the last decade or so will eventually become a dying breed and there will be fewer and fewer jobs for George 3 experts and more and more for VME/B experts.

The fresh-faced graduate whose first job is on a 2900 system has a start on the older peraon experienced on George 3 who will have to do a lot of

will more likely be staggering

atationery and complles, or

shifting disc packs around the

The DPM's office will have a

queue outaide equalling those

seen at the M1 servica station in

times of fuel shortages. First in

line will be tha senior systems

manager. Timescales for the

new application will have to be revised unless additional

resources are allocated without

delay. Since atarting the project,

the user's requirements have ascalated. Files, volumes and

complexities have grown. It is

the responsibility of the DPM to

inform the user of unavoidable

Next in line will be the senior

programmer. Unless the team is

given special productivity pay-ments, the future could be bleak.

The gas board down the road is

Not far behind will be the ops

manager. Unleas that new line

printer is ordered acon, his team

By custom, last in line will be

the site service engineer. Unlass

the installation can provide

undar-cover parking for his new

out-of-houre cells by public transport. For DPMs, living with

computers le fat from fun.

stantially higher basic pay.

under large piles of continuous

puter than the application. Manufacturers, led by IBM's Fulure Series' alm of making the next range easy to use by the end user, are making more and more effort to simplify user programming. In addition, the overnment has et last become aware that education, training. and retraining in the skills of using computing and micro technology are as importent as producing technical specialists.

Although much of the overnment emphasis has been on micros and semiconductor technology, this will inevilably leed on to computing and infor-mation technology treining in

The falling costs of computing power will quickly apreed computing awareness throughoul the young very quickly, whether it is at schools or through home personal computers. The BCS 79 Fun Felr showed just the tip of the potential interest among young people.

In industry, government and the education system there is also a very quickly growing realisation that a person in one field cen quickly be taught sufficient computing know-how to become a good implementor of applications systems.

Profassor Sumner said he belleved there would be a growth in the number of joint degree currently offering not only courses, linking computer guaranteed overtime but sub-As was shown at a conference

in Liverpool recently (CW, November 23, 1978), tha awareness that good computer ayscannot be held responsible for tems can be implemented by dalaya and hold-ups. Further- other than pure maths mathemore a complete re-assessment matical genil, leads to two interesting reactions.

Firstly, employers of computing staff realiae they can viden the pool in which they are fishing for ataff, and can look to non-computer aclence graduates and staff experienced in the relevant application, coupled car, he will have to respond to training. perhaps with some computer

Secondly, it opens the horizons of those who felt that, because they "didn't lika matha

Once upon a time a line boy can through the methot place yelling "the E series is coming" of ahlft rotas is long overdue. Perhaps the DPM would like to Well he did it again, of course, shouting "Chips to you!" and he had to be transported on thi databus to Saudi Alobia togethat with lots of brows envolopes be present during an all-night

The next day he Plug Ugitas daughter Ayoutu sen acreaming hysterically in less and net are next set all.

**LEASED LINES** 

E Saries - A Wintree Tala

then one of the E Sories testacles came enaking into Lookshkeville, through the market place, as lown) worn between Mr. Price alogs, until it came to the house of Marc, whose it supped, breathing Contracts and Purchase / Revisi Revis. There was much walking and greathing of tests and of Inhabitants of the lown ras and jumped into the Dead Sea logarins with Misson and for stil I have

The Moral of this story let if you want to obtain unbissed advice about the new IBN rinduicements came to i.e. We have no vested linerest, no obsolute porticilo of high priced 370 quipment, only opportunities to buy on your behalf.

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COMPLTER CAPITAL

COMPUTERS and "silicone" chips are the lateat fashionable talking point for pundits, public figures, national end provincial Press and broadcasting; and the telk is often very silly indeed.

Contributions from readers ere welcome — we will pay £5 for each

howlar we print,

Today we treat a lady from India who can do avarything this half-million-pound computer can; and nine times out of ten she can do it faster. Toning Boyd, the presenter, patting o dial-up computer on Magple, Thomas

# **\$25m dea** with HP

THE glant US services compar Automatic Data Processing in enter the market for inhor, online computing with a put on Hewlett-Packard's Sen 300III. ADP has signed a contract with HP which "could grown level of \$25 million" and energy to make first deliveries can:

The new venture paralle ADP's launch last year of All Onsite, a packaged hardwa software system based on DI-Csystem 2020. This how is an adjunct to the firm's h sharing service and thus dresses a completely differ market from the new syst which is intended for on applications.

The new service will be a ricted initially to the New Y metropolitan area and in likely to be extended to the for several years. It will be ered by ADP's Business Syn Division, an operation of pletely separate from their shoring service for which company is best known.

The Business Systems D sion is alrendy in the market online opplication systems in US, with a service based out Microdata Reality, Custon: can opt cither for a s contained system or con given terminal access low shared system run by ADP.

A commany spokesman the new systems would be s in parollel with the Microb. based equipment, and the m. did not signal the discontin tion of the curller line.

some of shoddy software and He ndded that ADP's exissystems work that has given the cummerchil application syst computing "profassion" such a bad name (see Programmer lbly on either system.

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own keybnarding on the paper's new computerised production system. It is this issue of "journalisti front end" which is ut the root of the current impasse at The Times, and which shows my sign of being broken (CW, November 23, 1978). Journalists at the Glasgow positors' union, the NGA, is and Herald, on the other hand, are unhappy that direct input is not to be brought in, because they control half heen prunised extra money to use it. Consequently they

to the newspaper

All show space sold for Microsystems 79

promises to be the major British micro show of

is to be held at the West Centre Hotel, London

SW6, from January 31 to February 2.

of private

**DP** schools

IN the US, the Federal Triple

Commission is proposing to en-

act regulations over privately-

owned vocational schools, in

particular computer schools, following complaints from consumers about fraud and abuses.

the chance to drop out of

courses after they start, without

FTC, says that many students

culisted for courses and then

found that the courses did not

provide what they expected. Many schools, however, re-

appired that fees be paid in ad-

Under the proposed rules,

during which a student could

drop out without cost, and those

ance and gave no refunds.

using money in tuition fees,

The rules would give students

Ed Moran, a lawyer for the

ALL exhibition space, amounting to more than 70 The associated conference also spans a similar stands, has been sold for Microsystems 79 which range of interest with papers on the first two days

1979. The show, sponsored by Computer Weekly, microsystems in commerce and industry; while

W6, from January 31 to February 2. To obtain complimentary tickets for the exhibi-Most of the major names in the micro business tion and further information about the conference

are exhibiting, with a range of products covering the whole spectrum.

contact Chris Hipwell, Room 125, Dorset House, Stamford Street, London SEI (tel: 01-261 8738).

Scots deal a severe blow

being devoted to the problems of developing

the third day is given over to personal computing.

production of the paper. idasgow Herald management is refusing to comment on the situation, but it is understood that installation of a computerbased photocomposition system with VDUs for input of text will go ahead, the VDUs to be operated entirely by former Linetype operators working from paper copy, rather than by the journalists themselves, who will continue to use typewriters.

have gone on strike, stopping

About £10 million is being spent on new hardware and on converting the old Scottish Dally Express building to house

Composing room staff of the Herald and its sister paper, the Evening Times, was to have icen cut from 237 to 88, but now only about 40 jobs will go. At The Times, one of the

biggest unions, Nataopa, which covers press operators and clerks, has joined the compositors in refusing to talk to there would be a 14-day trial management until notices have period at the start of each course been withdrawn and those who have lost their jobs reinstated. Ken Wiltshire, of Natsopa.

aker than ever.

Natsopa members have been

The preas oparators are doing

casual work on other papers

which have increased their print

runs to fill the gap left by The Timea, and the clerks are mainly

employed in Fleet Street or

magazine offices nearby, where

"temps" are being displaced on

On the other hand, the com-

The paper saya that the union

found jobs on other newspapers.

giving up alter that would said they were prepared to talk about reducing manning levels. receive a pro rata refund. but inly so long as no members quired to publish statistics of Job had octually been sacked. Thus acement and salarles of their prospects for reopening negotiations et The Times look

Moran said that the FTC wits About 800 staff have been laid off at The Times so far, with particularly concerned to prevent schools from recruiting students according to their about 100 more joining them each week. Nearly all the eligibility for government

Bernard Ehrlich, of the National Association of Trade and Technical Schools, said that the ules on refunds would push up fees for other atudents, as the schools had to budget for the number of students who registered at the atart of courses.

"If a student drops out, you can't drop an instructor to make up for the tultion loss," he sald.

# Union concern over YDUs

ADDING to the contraversy work has to be performed in surrounding the health hazards bright light but that VDUs are facing VDU users, TASS, the engineering staff union whose members both make and operate

worried-that the French PTT,

technology revolution Amazing micro game that THE revolution in UK newspapers technology, centred now around The Times dispute, has taken a severe blow, after a concession by management at the Glasgow Herald that journalists will not do their five-year-olds can play ronge of new microprocessor-bosed games that are boing intro-duced at this week's TV Microsloctronics and Micro-

allowing its members to take

other jobs, but is paying them

dispute benefit on the grounds

workers' co-oneratives.

that they have been victimised. Sirmingham, by Spectrem Mar-Journalists on The Times have It is a maze game for one or commissioned a study by the consultancy Joh ( wnerslife Ltd two playors, specifically do-signed for children aged five and upwarfs. on the teasibility of converting the namer into one or more

It is joined at the show by Zop, for colo ntayors.

rudiments of arithmetic. The rotall prices range between £9 and £18. processing Exhibition of the National Exhibition Contro, Spectrum oteo showed what it colled a computer games system, assentially a dosk-top calculator

Digits, a codo game using numerals instead of colour-codod pogs; and Lil' Genius, a learning colculator designed to toach tha

incorneratos a numbor of gamos

# Avery rejects £83m **GEC** bid

WEIGHING machine maker W & T Avery at Smethwick has rejected GEC's £83 million takeover offer made last year (CW, December 7, 1978) on the rounds that it is "well advanced in the application of electronics to weighing equipment" and "does not expect to be con-strained from expansion by lack of technical or linancial resources," according to a company statement.

Illustrating this, Avery has installed load cell weighing machines under six chlorine tanks weighing up to 500 tonnes each, and linked them via its CTC model digitiser to George Kent K70 PDP-8 based process control computers at ICI Mond's Lostok works in Cheshire, It had previously installed digitised systems for the British Steel Corregration, ather changeal companies and browers

# Remember the RK05°?

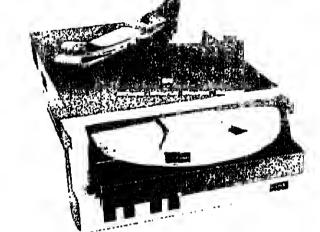


# The manufacturer doesn't:

The old RK05 was recently replaced by the new RL01, and as disc drives go, the price

Until you figure in the cost of converting all your media (to media that you can get from only a single source), and the cost of the new controller, new software and the entirely new support situation that you'll be facing.

All the Marin walk of the state of the



# Plessey never forgets:

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If you need a controller, just slip the Plessey Hex board PM-DCII/A into your PDP-II mainframe or our Quad PM-DCVII into your LSI-11 or our Micro-1. Plessey controllers and drives are fully compatible with the RKII. but much less expensive. We've been selling them for years, and have no plans to stop now.

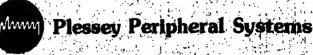
If you need more storage, just add one or more of our PM-DDH disc drives. They're enhanced versions of the RK05, faster and smaller, but fully hardware, software and media compatible with your systems, so you can continue to use your existing cartridges And they're available now for a great deal less

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#### the units, has issued a paper. is concerned about hazurds antitled the Health Hazards of relating to cya fatigue, stress Visual Display Units. it points to the problema of the latter case, it stresses that clerical workers, amny of whom the units should be serviced are now expected to operate the devices. It states that clerical so as to minimise the danger. French investment plans SYNTEC, the French trade contracts for Miniatry of Inassociation for bureoux, soft- dustry funding for expansion ware houses, and conaultanciaa. heve been signed with service

for major investment in computing and microelectronica (CW, Decembar 14, 1978).

the largest in Europa, is particu-

hns expressed satisfaction with firms along the same lines as the French government's plan praviously for mini and peripheral manufacturera.
The buraaux, however, are

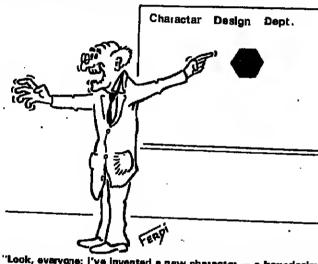
The French services industry. baying got involved in deta larly pleased that its importance pand into providing data pro-has been recognised and that cessing.

Berney Glbbens of CAP was really in hia element, doing all the barking over the Tannoy end alapping stickers on every cheet within reach. CAP was very much in evidence, as it can herdly fail to be when represented by Dick Waller (who is gatting on for seven feet tail).

I had a startling experience when telking to Dick on the Byte Shop stand. Now, I em on the tall side myself, heving suffered many a brulsed

meeting people who ere taller than me. Imagine my surprise when Gerard Talaucher from the Byte Shop staff stood up to join in the conversation and started talking eyeball to eyeball with Dick. Quite a aalutary experience it was, straining to cetch the words. I decided that the computer business is definitely looking

One noticed on looking up that the celling was com-pletely covered with balloons. Two girls from SPL were heving s jolly, and very busy, time squirting hellum into balloons and hending them out to the claniouring kiddiewinks, who promptly et go of them, I suppose because they ware openmouthed with excitement et all the exhibits. Mind you, tha most popular stend wes all the pub TV games.



All the dirty bits

puter!"

obviously so taken by the

man's charms that she failed

to notice when they arrived

that there was no computer

to be aeen; maybe it was one

of thesa new-fangled micro-

processor jobs that are aimost invisible.

Quote from e disgruntled, end thirsty, John Race, of the BCS Midro group, valnly trying to attract the ettention of the coffee-shop waitress during the BCS Fun Fair: "That woman would make a great extention."

would make a great operating system. 'You can thump your Escape key as much as you like. You needn't think you'll get any response out of ma while I have

ten interrupts pending. I might just give you a back arrow or

two...." He gat his giss af milk eventually but then there

LIFE has been imitating Art variation on an old line: again. Following my specula-tion last week about computarised sex, we epotted an advertisement for a Soho cinema club showing a flim called "Computer Game". Arming himsalf with his company-issue dirty mac, my pornography correspondent set off to investigate.

He cama back threatening to sue under the Trade Descriptions Act. Apart from baing positively the worst film he had ever seen, it contained no computera whatsoever. What a disappointment. What story line there was concerned s man who ran a bogus computer dating ser-vice in order to entice girls (and others) up to his den. I will draw a vell over what. went on when they got there; what o pity the film did not as well — it was very boring. There was one memorable usage accounting routines.

Bandwagon driver

IAN LLOYD, the Consar- over Westminster." vative MP for Hnvant and Waterloo, was making some smug"I told you so" noleea at a confarence on microa recently. Othor MPs used to regard him as a crank back in tha Sixties when he first started asking, "What are we going to do about the com-putar?"

Now things sre-different. At the time of the Horizon programma on micros last March, Lloyd sald, "You could actually hear the bandwagons changing gear all

Lloyd auggested aome titles for the talks a selection of his prominant colleagues would give If asked to pronounce on the subject. Erlc Heffer would exppund on "The microprocessor revolution how to stop it". Harold Wilson's aubject would be, "The microprocessor revolution — why Tony Bann bunglad it". For his former laader, Ted Heath, Lloyd suggasted, "The micro-processor revolution — why Mrs Thatcher must go".

# The viewdata age: Power to the people

Industry has been revolutionised by the impact of microprocessors but the effect on the general public has bean lass notices ble, aithough in the lest year there seems to have become more awareness of the silicon chip. The major application of this technology so far eppears to heve been in the field of digital watches and clocks and items such as electronic door chimas.

However, within a very short time, It is likely that there will be a very significant impact through teletext/viewdets where such technology is introduced into a television set giving a very powerful tool to millions of people. In this context, millions is certainly not an exeggeration, since the Post Office's projected figures for the growth of its viewdata service. Preatel, give a market of some three million sets by 1983. Of these, about 20% are expected to be business users, the remainder domestic customere. The cost of a suitable television set is now around £700 and, as happened with colour television, the cost will probably plummet as the market expands

The public service Prestel is just getting under woy but although there have been some articles covering technical details of the system (and of the broadcast teletext aystems, such as the BBC's Ceefax and ITV's Oracle), little attention has been paid to the effact that such a system will have on both the domestic and business markets.

In the domestic market, Prestel will give a user, in his own home, accees to a large database. Although the size of the viewdntabase is potentially unlimited, il is ilkely that each Prestal computer will have access to about a quarter of a million pages of data (where a page can be considered to be one

While this is a very large amount of data, It is by no meane infinite and hence its principal role is likely to be as a first line of inquiry rathar than the fount of all knowledge. Even with this relatively ilmited role, it will replaca a large number of dlaparate sources of information and will provide a quick and simple user interface to that data.

In many cases, it will be possible to get all the required in-formation via Prestel; in others it will not, or it may be presented

For example, If a user wanted lo know tha time of arrival of e train, Prestel would be very convanient sinca the data could be found very quickly and the ueer has to copy a small amount of information. On the other. an Act of Parliament, Prestel would probably allow him to find the appropriate Act and determine that it was the one he required. But until some local storage medium is provided, it would be impractical to copy all the information and the user would have to rely on more conventional methods to obtain

In this case, it is obvious that appear at first sight, since in one ideal location for a Prestel many cases either a dedicated tarminal would be n public system or perhaps no system at

Viewdata, as opposed to tremes, viewdata can fulfil an Taletext, is an interactive important need, particularly as a medium and this facility is again, means of communication betlikely to have a significant ween organisations which have



Stokes

Millione of people will ehortly heve eccess through their domestic TV sets to the powerful technological resources of viewdete in Its vertoue forms. gnificence end relevence of this development is here assessed by Dr ADRIAN V. STOKES, author of a new book, Viewdete: A Public Utility, published et £9.95 by Input Two-Nins Ltd, 7 Banatsed Roed, Purley, Surrey CR2 3ER (Tel: 01-

impact. Perhaps one obvious use no direct links or commun sys-

it is clear that the system can provide, by means of the Interactive facility, access to many of the functions of a computer, aithough the majority of users will be restricted by only having a numeric keypad. Nevertheless, a large range of facilities could be provided, including being eble to program the con-

is the provision of games such as

noughts-and-crosses, Star Wars

etc! Although acarcely likely to

have a profound sociological

impact, it is quite likely (to judge

from the sales of television toys

slready) that such usage might

form a considerable part of the

On a rather more serious note,

total usege of the system.

puter (cf programmable calcu-Although the full fscilitles of a computer would not be provided, the facilities that could be provided are likely to be more powerful than are obtainable by uae of a calculator, and are likely to be similar to those provided by small "home-brew" com-

Another obvious use of the interactive capability is the provision of "response frames". A supplier of information (an "information provider") sets up a epecial type of frame which hae areaa where the user can insert information. When he has completed the frame, he checks it and then, if correct, "sends" it to the IP who will then take the appropriate action, for example, eending goods and debiting tha cost to the user's credit card,

A rather more sophisticated use of the interactive functions is "telesoftware", in which an entire microcomputer is contained in the terminal and eoftware can be "down-line loaded" into the micro. Of course, for standard programs, teletext may be used but viewdata gives the user the facility of writing his own programs. Some experiments have been carried out on this concept and some programe have been transmitted over the broadcast services.

What of the business usar? The uses of viewdala are perhapa not as obvious as thay may library, probably on a "coin-in-all is more cost affective. How-the slot" bosis. ever, between thesa two ex-

in addition, of course, it provides a very convenient means (provided the projections of the number of users are sccurate) of advertising to the public nt large and perhops one can now see that, whether in the domestic nr business markel, viewdata can perhaps best be regarded as unother form of publication with the additional advantage over other maans thot it can disseminate informotion almost immediately.

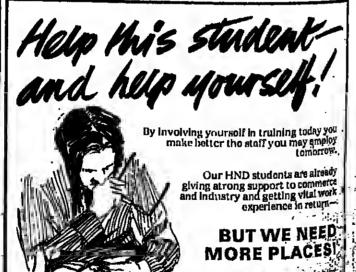
There is one other aren where viewdsta has greet potential,

uses to which the system can't put in the future. This area is is use for disabled people. For physically disabled people, it is quite cieur what the advantages are - access to data which might utherwise be totally insecessible, the ability to order goods and services without

moving from home and so on. However, it has many uses for other groups of disabled people, such as the desf and blind. In the case of the former, it provides menns whereby they may communicate over the telephone (using, of course, an alphanumeric, rather than a simple numeric, keypad) and the Pox Office has demonstrated a rather elegant system for such use. It is perhaps worth mertioning that the original propesal for teletext envisaged it as a means of subtitling television progrums for deaf people.

It may sound odd to sugges that viewdata may be used for hlind people since it is essenliaily a visual medium but il don not appear to be too difficult to interface a voice synthesism into the system thereby giving: vocal representation of the data and some experiments are

afrendy in progress.
This year will see the start d the Prestel muhiic service. While the cuncepts and technolog used in the system may not be earth-shattering, it is probab that its impact will be very farrenching, probably far more so than when the system was propascd at the beginning of this



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# What a girl of 13 thought of the Young Computing Fun Fair . . . . .

THE BCS 79 Young Computing Fun Fair (CW, Jenuary 11) attracted almost 4.000 hildren to its inixture of enerteinment and educetion.

To get the view af the show's target audience, Coniputer Weekly is publishing this report by 13 (going on 14) year-old Virginia Firnberg (pictured right) daughter of National Computing Cantre director David Firnberg. Virginia says lier ambition is

to win Wimbledon 32 times and then become a jazz planist. Here she dons e poetic het for n report in verse she headilness Can't think of a name.

I wake up in the norming in my warm and brophing hed To find I have to go

Ghom, Gleem, impending doom I'll have to find an excuse But I can't think of any that are worth a penny So I fill my head with abuse

Dressed, washed and break I make my way to the car The traffic's tough And I'm feeling rough Noc we've got this far

But what a surrise when I open my eyes and go through the door to the show for it's not what I thought When I lay in my bed and found had to go

us I retired to bed Av ghomi and despair fude:



Some paper, a Uathy badge and guidness humes what else and the hadge on my cap I sed

t book around, which uniozes in my eyes and my chain i With bright colours here and computers there And a thick crush in which I go

For me the hest part reas the computer art which took the machine to its limit But the lecture and film

1 found boring and dull Leas sorry Fd decoled to sit must Although my day had hegin wil

no thought of fun and regretful I'd answered Dad' The thought in my head

"Compuler area") a had after

# with a plastic bag and things in it IBM announces more communications software for System 34

munications software has been announced by IBM for its System 34 smail business system.

Available in the first quarter of 1980, the enhancements to the operating system enable net-works of System 34s to be set up using the SDLC communications protocol. Networks can be both point-to-point and muitipoint. In the latter case one System 34 serves as the primary station, and communicates with secondary System 34s as a col-lection of logical point-to-point

The SDLC facility is usable only between programs written in Cobol or RPG II. Up to 64 concurrent eessions in both directions can be set up.

A 3270 program interface is nlso on offer, which enables the System 34 to emulate the 3271 and communicate with an IBM 370 host. The interface allows a program to program communication using 3270 proto-ICL waits for cois, and up to 32 parallel sessions between RPG II, Cobol or Assembler programs are sup-

The Interface does not, how- THE issue of whether ICL can ever, enabla a 3270 display tersell mainframes incorporating minal to be accined to a system US-made Intel microcircuits to the UK Atomic Energy Com-

The announcement also includes several enhancements to the System 34 Cobol, including additional syntax for read-writs varbs, and verbs for the acquisi-tion and release of workstations.

# CDC loses control of Elbit

ISRAEL'S only computer mini-moker to 37%.

Control Data previously had a jump of 42% over the same quarter of the previous year, have been controlling 51% in Elbit, and the Haifa-based company supplies its System 17 minicomputers of the company. The last system 17 minicomputers of the company of the company of the previous year, have been recorded by National Semiconductor. Net carnings on this total \$8.1 million, a rise of 45%. This gives National a first half revenue for faceal 1979 of \$353 million, with terrors. lion, and the effect was to reduce Control Data's stake in the

Cyber 18-17 model in the Cyber 18 line. National a first half revenue for 18 line. National a first half revenue for 18 line.

Wang's first-half figures at record levels STRONG demand for tha powerful new 2200 VS siles of word processors outside of the financial year. Ovarall, database-oriented business the US in the first aix months of business was particularly atrong computer, and rapid growth in the current financial year were. In the Octobar td Dacamber word processor sales, have greeter than those recorded in quartar, with net profit up 82%

nings of \$1.88 million.

pushed Wang's first-half turnover and profit figures to
record levels. For the six months
to December 31, Wang's net
profit rose 86% to \$9.7 million on
stands at \$117 million, and turnover up 60% compared
with the same period in 1977.
The company will be spending
by of orders currently
\$14 to \$15 million on research
turnover up to 57% at \$130.8 m turnover up to 57% at \$130.8 m. the figure a year ago, and 31% up year - 75% more than last year.

Babycham planning application loses its sparkle

A site visit by committee members was planned for December but this had to be postponed due to had weather. A further

to decide the matter, it has been suggested. Press. No details of the applications or systems

Allied Brewerics group.

COMPUTER WEEKLY, January 18, 1979

If the district council approves the proposal, there would still be use hurdle to hear: meeling to decide a date was held earlier this the larger Memlip County Council has

week after Computer Weekly had gone to the final say. "All we can do without the county coun-

cil's authority is refuse the application," said

# No plug-compatible Comten in merger talks

users in IBM CUA

Bahycham, to build a new computer centre in Shepton Mallet, Somerset, is threatened

with rejection by Mendip District Council

Although the committee has not yet met

that because the proposed site falls within a

conservation area, building permission may

PLUG-COMPATIBLE CPU

users look like being left out in the cold by the iBM Computer Uaers Association, following a decision by the CUA Council not-

to propose a change of rules to

allow them membership, Scus.

the technically oriented group

for higger IBM users, has also

decided that it prefers to exclude

non-IBM CPU users, at least for

the time being.
The CUA Council's decision

was hased on the results of a

survey of members which was

initiated last summer (CW.

August (1, 1978) and carried out under the direction of the CUA

deputy chairman, Graham

According to a CUA spokes

mon, the decision means that

he council will not propose a

change to the conditions of

membership at the CUA annual

meeting in April. But he pointed

out that a motion could be tab-

led by an individual member at

the meeting so that it was pos-

sible that the rules of member-

The muln condition of CUA

membership is that a user should

have at least one IBM computer

installed or contracted for, But

the machine does not have to be

a mainframe, so that a user who has replaced all his IBM main-

frame hardware with plug-

compatible kit can qualify for

minicomputer, for example.

nembership If he has a Series I

However, each application for

CUA membership is considered

on its merits, so that an Amdahl

or Itel user who happened also

to have a Series I would not

A user with at least one IBM CPU does qualify for CUA

his CPU hordware is plug-

A spokesman for Seas told

bership, even if the rest of

utomatically be admitted.

**US** decision

mission without prior US

government approval has been

referred to the Department of Commarce (CW. January 4).

ICL says that the Dapartment has promised an sarly reply but

that it is still studying the case.

ship might still be changed.

James of Empire Stores.

group had discussed the question of admitting users of plugcompatible CPUs but had decided aguinst allowing them to join at the moment. However, the situation could change in the future if IBM unbunilled its software charges in a big wny so that plug-computible CPU asers also became major IBM software customers.

The conditions of Seus mem-

37ll or e 360 processur, provided bigger. Seas, which is the European counterpart of the US group Shure, has about 200 members, most of them big technically-priented users. Gulde, which has about 1,000

members in Europe, mainly commercial type organisations stated last year that it would not admit non-IBM users (CW August 10, 1978)

# Govt seeks evidence on formatting and storage

EVIDENCE from the computer community on techniques for formatting and storing archival records is being sought by the government's Committee of Inmiry into Public Records.

The committee is charged with reviewing the arrangements for selecting and preserving public records, particularly in the light of technological changes. A good deal of govern-

the Contral Sintistical Office, and views are being sought on how access to this can best be provided after it has been handed over to the Public Records Office for preservation.

Anyone wishing to give evidence to the committee should send it to Graham Aylett. the committee secretary, at 38 Parliament Street, London SWI ment information already comes not later than April 30, 1979.

COMMUNICATIONS equip. ment manufecturar Cemtan o St Faul, Minnesols, is holding company which could last to a marger. The unnamed sultor is lihely to be ITT, which markets Com-

tsn communications processors in Europe as the ITT 3805 and 3807. The processors are part of ITT's portfello of Cemmunications Network Architecture products for IBM 370 and 3030 series usars, end ITT has sires dy acquired Courier, the company which manufactures the CNA 3280 series of displays which are computible with 18 M's 3270

Cemian says it has rejected the company's first effer for acquiattion, but that talks ere ontinuing. Other sullers are also in the wings, hat the mest likely contenders era cempanies tika Racet, Nerthern Telecement possibly Slamons er GEC. • In France, ITT's CGCT aub-

sithing has sold its massage awitching division to Thomson. The division employs 115 people, and has 20% of the French market, solling its own measegs switches, which are Independent of the ADX line manufactured by STC in the UK.

# **FAMILY PLANNING**



# The Simple Solution—QANTEL

Gentel is a planned family of computer systems that solves the problems of a wide veriety of large and small organizations. The moduler simplicity of its heroware; plus a large range of standard soltware packenges, makes it rotal for both the limitarial and experienced computer user. But Quitel is deverse than that.

There are three series of Cantel systems wall designed to proviousing simple field urgrations to college a businesses. From the simplicity of the 200 Saries - costing less than \$7,000 - through the 900 Series, to the largest multi-terminat 1400 Series with the 950K bytes of user memory and softing being of disp storety. They all use the software is never weather.

What's more. Center's REPORT GENERATOR package has been designed to allow management to produce any report it wants when it wants - without the need for any special tearlier.

wants - without the ribed for any special training. In either Cranter represents the vary best aid to Managers in the Lunning of their businesses.

With this sort of background and with everything - hardware, spliwere support - supplied thy just one company (including maintehence, shywhele in this UK). Deniet is destined to become a very powertor planned lamby!

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# GILB'S MYTHODOLOGY

# To keep up to date, get a technoscope

essional keep up to date with the rapidly changing technology, while giving priority to immediate job needs?

The question must be an important one, since I lind that my course participants usually ask it of me at the first lunch of every course I hold. As a consultant, writer and teacher it is u the nature of my job that I must try to keep right up to

I am pretty sure that my personal approach is not for everyone, and I don't feel like pretending I know the right inswers for each individual. But I hope that if I describe some of the approaches I have found useful during my 20 years in the data processing field, some of you will find a few ideas you can use.

One of the first things l question is the goal of being "up to dute". At least this deserves careful qualification. My grandfather, it is said, rarely wasted time looking at motion pictures less than 25 shown, they must have dethat we need some efficient

There is clearly no way any of us could absorb even 1% of all the published material in or related to our field, not to ness of a technology we need, mention less formal informa- therefore, to get reliable data tion sources. Maybe if we on the many dimensiona of it only those principles which had survived for at least 10 or 20 years, we would be using our time well

date is to refuse to spend too good for me?" picture. much time with the latest fad many things which are clearly ception tools. .. of a more classic nature.

gramming area, the subject of known to us for decades in the quality assurance (inspections, case of some of the better reviews, team reading of pro- management and enginearing grsms) is in many ways a tools, and for centuries in the "pop" subject. But we all know that the concepts of quality classic thinking and perception sssurance and auditing ara tools. very important parts of other Until an adequate set of perequally complex disciplines, ception technology tools has therefore I have concluded been mastered, I don't believe that it is worth learning as you are justified in spending

ware project management, and we can safely assume that any investment in learning in these areas, from psychologists. conventions imsnagement literature or even perhaps our computer colleagues, is bound to be of benefit.

Another ares to which i have devoted some attention is the mensurement of software quolities. Again we have the clussic manugement and engineering experience that measurement ability gives control, knowledge and proeress. This motivates me to invest my time in lenrning measurement technology from other disciplines, and even some of the primitive concepts emerging from computer dis-

clplines.
This leads me to another subject dear to my heart. It is far more important to learn about perception techniques than to waste time listening to someone else's personal judg-

The systems muny of usure forced to take a position on years old. His reasoning was inlimited daily are so complex that if they were still being that human heligs have great difficulty in understanding monstrated some merit. Ccr. them and judging them in any tainly this story reminds us conclusive way. Each of us has a different set of goals, and mechanism for selecting the these are primary instruments things we are going to learn for understonding the "goodness" of any technology for us, at this point and later points in

In order to judge the goodlimited ourselves to learning which relate to our own varied goals -- cost, time, risk, reliability, ease of learning etc.

in addition we need some nethod for putting all this in-Consequently, one of my formstion together into a first principles of keeping up to meaningful whole, a "how

find that almost none of my or announcement, and to collesgues are formally trained spend time learning about the with any reasonable set of per-

The tools are there, and I. For example, in the pro- believe that they have been

much as possible about them. your time in "keeping up to Similarly, questions of date". Once you have mastered motivation and human the basic art of seeing the psychology are emerging as quolities of any technology or really important issues in soft- system, no matter how new o

> What do you expect a leasing company to do?

many vehicles including Fords.

Give edvice? We do, ask us about any form of leasing. and we will explain it in words and terms you can easit

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complex, you have what I like

examining the "future shock"

rste-of-change pouring in over

us. You will hove a mechanism

for selecting those new tech

nologies which ore of potentia

importance to your daily work

And, more important, you will have a reliable mechanism for

deciding NOT to study further

most of the technical details

I find that I have this

capability, and that it is ensily

picked up by others. But I have

had to teach it to myself over

the Inst 10 years, it was never

offered to me in the data pro-

cessing business. The tech-

noscope is not just a tool for

me, but is for sharing my

understanding with others

and beyond that, giving others

the power of seeing things

I'll get back to this subject

sponer or later (there is so

much more to say). But I feel

The most important points had

to be given first. In an attempt

to summarise I'll list my steps

for munaging the ever presen

State multiple goals clearly

and as messurably as pos

For each potential solution

(new technique) ask first,

before getting into

mechanical how-lt-works

detail, if measured facts are

available in the goal areas.

If such facts are available,

for the goal areas.

to provide such facts.

Get yourself a technoscope

t is the best help in keeping up

for the PDP-11

vides a means of maintaining an routines.

up-to-date plant register while

Two basic report types are

generated: a full plant report, by

location, and a plant profit and loss report on disposal. The sya-tem will olso produce an action

nsuronce and costs.

AN naset management system ware is not a prerequisite to

capable of running on any DEC installing the pnckage as it is

PDP-11 Dataaystem has been supplied in object form. Tplant

launehed by Time Utilising programs run under both RT-II Business Systems, of Leicester. and RSTS operating systems,

eneroting a variety of reports conjunction with several cilents,

on such aspecta as depreciation, the system has been in intensive

package pro- and use DEC's Dibol run-tim

to date with a minimum of

stream of facts and fictions.

which I have not yet learned.

being flung st you.

This is o basic tool for

to call a "Technoscope"

# APL\*Plus available. for in-house use

SOFTWARE FILE-1

wanting to run APL in-house use, but not for some years. Its hove been extended considersbly by Scientific Time Shnring ware product complements the Corp and its UK operation, APL Plus Ltd.

In addition to Introducing a packaged APL minicomputer system (CW, January II), STSC has announced that It is to market the software slone for lnhouse use. This will include not only the firm's proprietary APL \*-Plus but also a series of ennancements to IBMs VSAPL. Scientific hos sold APL\*Plus. 370

re-introduction now as a softavailability of the software as a component of the Quad 140.

As on the Quad 100 system and STSC's Amonhl installution at Bethesda, Maryland, the software depends on the support of IBM's OS/MVT uperating system. On a larger in-house machine, though, users will have the option of running MVT us a virtual machine under VM/

The new service will be mar-

Meanwhile, information is be-

ginning to emerge on the firm's

latest introduction, its personnel

management system (Software

File, August 3, 1978), Called

Resource System, this is de-

scribed as a flexible, end-user

oriented product, integrating a

comprehensive datubase with

the company's well-known

Mark IV data management sys-

which recently published a set of

November 23, 1978), the NCC

hos set up its own working party

With the growing number of

software packages being

to report on the subject.

uldelines on softwure product

IV/Human

product licences

(Software File.

Management

keted both to the US and in

# **Production control** thrust by Informatics

FURTHER confirming its commitment to the spplications software market, informotics manufacturing systems. These will use Production IV software as basic building blocks. has created a new corporate post of vice-president, npplication products, and has at the same time reaffirmed its interest In one specific application area, production control software.

First to take up the new post will be John Splavec, who was formerly vice-president responsible for US und Canadian sales. He will now be responsible for the development of the application product line, and the expnnsion of international markets for these products. One application areo in which

the firm is likely to be porticu-

larly active is manufacturing Industry.
Although it has previously been disappointed in its marketing of manufacturing software, notably the Production IV system (Software File, August 3, 1978), Informatics still sees this

go further and evaluate as a large and relatively undetheir degree of satisfaction veloped market. It intends, therefore, to con- If such facts are not forth tinue to offer consulling services coming: STOP, don't to manufacturing industry and waste your time. Challenge will continue to market Producwhoever is selling the ideas

in IV, though on a different isiness basis. One of the problems previously was the degree of tech-

nical involvement required from the user. Informatics' manufac-

#### **CGS** tops effort, I have to use my tech noscope daily to survive in this turing systems division has now \$100 million been restructured to emphasise Plant register package

THE CAP-Gemini-Sogett group looks sot comfortebly to exceed \$100m in turnover for 1979, with a consolidated revenue estimated at 501m france— \$119m et current exchange retes. Representing a growth of 19% over 1977, the earnings will yield a net profit of eround

Revenue excluding the fig-ures for 9essard (Softwers File, July 13, 1979) is expected to even stronger improvement of sround 27% over 1977.

For 1979, the group has see itself the same overall growth rate as for 1978 — 18% — and is projecting total ravenue of about £140m.

# Substitute for DEC Backup

report, highlighting plant that is A HIGH-PERFORMANCE due for pariodic management backup program for Digital attention, such as re-insurance. Equipment PDP-11 users run-An important aspect of the ning RSTS/E has been anaystem is its facilities for current nounced by Jenson Computer cost accounting. Explicitly de- Systems. Called Saver, the aoft-

Developed by the company is

use at one aite for over nine

months. It is priced at £2,000.

sumed, typically achiaving cuts write a partial or complete log Although Tplant was written of around 85% 95%. It also file.

by a factor of batween 3 and 10. The package in addition offers a number of functional advantages, according to Jenson.

Among features mentioned by signed to meet the requirements were is a substitute for DEC's write PiP/DOS files, and to of the Hyde guidelines on infla-Backup and can run up to three tion accounting these permit times faster.

The company are the ability to write PiP/DOS files, and to write a system bootable tape the user to apply inflation in
Partially written in Macro 11, system disc. Savar will also perdicea specific to each asset cate-gory — and produce appropriate impact on CPU cyclaa con-update or access dates; and will

NCC to investigate

tems is thought to be the pdn

cipal reason for STSC's decision

to offer VSAPL enhancements.

The company has been run-

ning a VSAPL service in parallel

with APL Plus for about 8 year

and in the first software product

release has made avallable fea-

tures for formutting and file

management. These will run

under the control of VM/370 at

At the same time, the firm has

strongly hinted that VSAPL will

he the hasis for most of its future

developments. According to the

UK managing director, Michael

Branson, it was possible to envi-

sage its eventual enhancement

to the point where it would

Branson also clarified STSCs

plans in the systems business:

While the Magnuson-based

machine would be the first to be

offered in the UK, it was only

one of several 370-compatible

the luture, All the systems,

though, would share the name

In addition to selling its sys-

tem software for in-house use,

STSC will also be making avail-

able its proprietary applications packages, including the Finan-

cial Planning System and the

Comprehensive Manufactuons

revesions that might be used in

match APL Plus in facilities.

an "interactive processor."

purchased, says the NCC, com-HOT on the heels of the CSA, puter managers need to draw up sultable enntracts to cover purchase, installation and timites, "will help managers to understand the nature of sales

confincts - such as terms that should be covered - and will help to equip them for the mecessary controct negotia-The working party, chaired by NCC group director E. D. Scriven, ulms to produce a handbrook along the lines of the NCC's book on hardware con-

tructs, published in 1977 (CW) August 11, 1977); Other members of the work ing party include a representative of the institute of Purchasing Officers, and other from the Central Computer Agency, PA Management Consultants, Digital Equipment Simplicity Patterns, and Bab.

# Scicon marke research

A MARKET research services been introduced by scient Computer Services Supported by Scient Willyacing by Scient's twin Univacing by Scient's twin William Kerris

MR I. le Duc, of Cuckfield, Sussex, was one of saveral renders who sent in alternative answers to the Christmas Issue problem (which called for a solution to 4×DEUX = HUIT, with E even). It now seams that the alternative answer given at the time — DEUX = 1324 and HULT 529B with E odd - is in fact. the only unique form after all.

Mr le Duc anded his letter by putting forword the following omatic for readers' mys

LESS +

with F known to be 3. See page

# Datasolve offers Asas

A FURTHER success has been notched up by Atkins' finite element system Assa, with the first installation of the package by a commercial 18M-based by a Commercial 18M-based bureeu, ROC Disasolvo.
To be ottared to Disasolve

cliente soon, the software will run under MVS, and will be supported by engineers from both Deteaolve and Arkina. Clionia will thus be able to select the tavel of service required, ranging from basic com-puter ensiyais to full stress ana-tysis consultancy.

The Ases version supplied is

capable of handling both static and dynamic engineering problems, Altins notes, adding that the power of the 18M/Andohl tions system will man the need tur stress analysis of inconsingly complex structures - such as the dynamic anetysis ot ottahoro jackot structuros.

the Q-Pac payroll package, Q-

Pac Services Ltd (Software File

January II), is to take over all

UK marketing of the softwore from the end of the month.

Q-Pne Services was originally

set up by the South Alrican

parent company in the early

the embayour new year.

ture tCW, January 11).

gave the first annual Bt'S Love-

went on to say that poor soft-

ware and systems design "can

even of excellent hardware

conruging thickets of briars."

s overflowing with jobs.

Puzzler

Expanding this thought, he

since PPL took up the UK (0628) 71824.

PROGRAMMER NOTES

Troublesome stuff

**0-PAC** Services

increasingly popular with IBM This meant, he sald, the per-

i single inicrocoded instruction

traditionally shied away from microcoding its top end formsnce seen by the user at machines, it now sees a microcoded Instruction set as an increasingly desirable feature of its most powerful hardware.

This was made clear by an IBM speaker at the recent BCS 79 Living with Computing con-

Addressing the Messurement of Computer Performance ventional instructions. Specialist Group, Oliver Wintringham of IBM (UK) explained that "real performance advanlages" were the reason for in-

necney for the aroduct.

ware File, May 25, 1978).

1970s, but has been dormunt St, Maldenhead, Berks. Tel:

smill' should be regarded as the as computing needs to built on a

It was uttered by that Incrute pictous of any subject which

"practical philosopher" of coun-pating Murray Laver when he cluding the word 'science' in its

which, rather like the Sleeping tured, non-symbolic and Besuty, is surrounded by dis- generally squifty data. Lavar

and coffee-stained coding sheet, computer sciences did not deny

you might chuckle at this often to commercial and industrial

repeated attack on software and computer maers the "strong

settle back to churn out more theoretical support needed to

code in the comfy knowledge stay in business and out of tru-

that, come hell or high uncm- uble" as thay exploit new infur-

Liver, however, niter pointing market, page 2.

ployment, the computing Press mation technologies.

most pointed understatement of them theoretical boundation

According to Q-Pac director David Teron, the decision to re-

activate it was taken last year

following user criticism of PPL

support arrangements (Soft-

O-Pac Services is at 62 King

commented that he was su-

"courts respectability by in-

were attracting large numbers

of students, he perceptively

suggested that the reason for

this might be the same as one

classical Greek literature, that

"it not only elevates above the vulgar herd, but leads not infre-

quently to positions of consider-

academically respectable," he

sdded, "is that it should be analytical, coherent, teachsble and

rough; computing science meets

although rother too much of its

toughness is Intellectual gristle

rather than sinew, for there is

much detail but few broad prin-

ciples or general laws."

Having pointed out the main

davelopments in computing

echnology, ranging from dis-

the reol world of "life's unstruc-

sald he honed the "rather ten-

tributed computing and parallel processing to the need to handle

some of these requirements.

"What makes a subject

ble emolument.

suggested in detence of studying

Although computer sciences

"The interpende assist added to the machine 14 instructions specifically useful to MVS. By exploiting the processor's

lowest level, these allow the operating system overhead to be

Microcode for large machines

levels of architectures such as "For example, in the case of SNA, IMS DL/1, MVS, and one MVS function, the software language processors mplementation took 58 mstroc-It was meaningless, Winttions and required 332 machine ringham noted, to orgue in this cycles for its execution. When context about millions of inmicroroded, the function structions per second (MIPS), as reduced to a single microcode

cuuld do the work of many conmachine cycles." Among savings that microcode could achieve were a Wintringham used as an example Extended Facility. reduction in the number of IBM's accelerator package for status savine and restoring MVS/SE consisting partly of operations; a reduction in the ranventional coding improveneed of validity checking; fewer ments and partly of microcoded repeated fetches and stores; and he chimination of the instruction letching overhead

> Thus a machine with a micro -coded mistraction set offered scope for increasing the speed of

instruction that executed in 70

frequently used routings.

Microcode implementation of such functions is onaligous to writing the key portions of a high-level application system in One aspect of this analogy.

Wintringham noted, was that identicul criteria applicd. "Among key considerations, for example, are whether the

function is stable enough that It is unlikely to be modified, and whether it is really used enough to justify the effort of a lower evel - and thus more efficient – implementarion.

"When you look at most systems, the cruical kernel usually turns out to be very small indeed, Rewriting additional secnons gives rapidly diminishing

tailed application of this trade off in the case of IBM's OS/VST

- Geoft Brown, chairman of the specialist group, commented that the Dispatcher was one o the gost intensively used lunc tions in VSI. Yet when IBM his produced an assist for th operating system, only the last five instructions had been innerocoded out of the inpe or D pages of assembler which constituted the Dispatcher.

Wintringham confessed that was not tamiliar with the details of VSI.

While microcode can undenably contribute to reducing system software overheads, there have been suggestions that its natemability is of at least cipia significance to 18M thinking (Software File, April 10, 1978).

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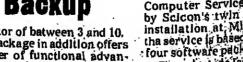
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using Tuba Cupid-11 file aignificantly reduces the Saver is sold by Jenson for management systam, this action number of disc accesses, usually £750.

by Scicon's twin Univacing installation at Milton Kayles installation in the service includes Scientific analysis respectively. Stallation analysis programs of the Milton interstat and Batchetal, the Milton interstat and Batchetal, the Milton interstat and Batchetal, the Milton interstat analysis of larger pater variate analysis of larger pater volumes.

Other software supporting the service includes Scientific in the service i

HINT OF THE WEEK

Don't treat

...the fast one

Raysolve

# A problem shared is a problem halved—use others' experience

AT some installations it is company policy to recruit operations should be sware of the legislato the sdvsntage of the site management who are thus Offices, Shops and Railways Act relieved of the need to cure the new recruits of any "bad" board, containing solely first-aid operations habits, and are able to indoctrinate them into the use by employees (Op Spot,

thamssives; they tend to sequire a rather narrow, or limited, view of operations and are in no position to judge whether or not they are treated fairly by the manager. If he doesn't respond installations. Operators at such siles just do not know how other installutions are organised and

This situation is brought to our attention by an oparator who is employed at one such site. In the absence of any organisation or body capable of standards in operations he poses some direct questions, in es-

How are the operators to know if the site is up to scratch on health and safety matters? And what of focilities for the

How are they to know if their basic salary and shift alluwance are as high as they should be? appreciate the problems faced by operations staff? And what

do such organisations have to

offer the operators? Weli, someone, somewhere, once said that a problem shared of work. is a problem haived - n thought which applies very much to the difficulties that operators often meel. Operations staff must communicate with counterparts at other installations; there or more people are employed. exists within the operations fraternity a vest wealth of experlence and knowledge, and the answer to a particular pro-

staff at trainee level only. This is tion that exists for their benafit. Under section 28 (1) of the

requiaites, must be provided for installation way of working June 8, 1978). This nearly quite easily.

Always means that when shifts But in the long term this sre worked, a first-aid box must scheme tends to have a de- be placed in the computer room trimental effect on the operators and be under the care of a rasponsible person.

If this facility is not provided at your site, discuss the above Act with your operations in a prompt and appropriate branch of the Health and Safety Executive and gat tham to take

some action on your bahalf. Also inform your operations manager that both the St. John Ambulance Brigada and the Red Cross stage first-aid courses and estublishing and maintaining charge less than £10 per person

> Incidentally, under section 27 (I) of the Officas, Shops and Railways Act, you are entitled to refuse to work in an area that does not have suitable firefighting equipment, in terms of the computer room, this means an automatic CO2 system, or

manual equipment Under the Health and Safety et Work Act, no employee should work for more than five and a half hours continuously Such a period must be followed by a break of at least thirty minutes, remote from the place

On October I new powers came into being under the above Act. It is now mandatory for a safety policy to be drawn up and displayed in all places where five

So a good general rule con-cerning health and safety metters is this: if in doubt, contact there is often someone who has the Health and Safety Executive and ask their advice.

The basic salary and shift blem. It is folly to waste this sllowance psid to operations More specifically, and refer-ring to the question on health staff has always been a matter of contention. It is a rather coms considerable extent, on how tors, who first learn of the new and where the operations jobs fit Into the company's grading units actually arrive in the comstructure. Of course, many other factors come into piay, in-

The agulpment used. For Instance, IBM operators, generally speaking, tend to earn more

Where the site is situated. For instance, operators in the capital wili receiva a London weighting allowance because the cost of living there is higher than in other parts of the country.

Rasd the computing magazines to keep in touch with the operator market and be alart to any opportunities that might crop up. And if you decide to make a move, ensure that you secure a position worthy of your

This brings us to the quastion about unions. But first let's consider the concept of an oparators' union, as many oparators have contacted ma about this subject in the past.

Here are some of the areas in which such a body might effect

have already dealt with health and safety matters. And an operators' union, or call it what you will, would do much to ensure that operators are better taken to establish and maintain sufficiently high stendards.

At some eltes hardwere sometimes even software - enhancements are carried out

**MICRO NEWS** 

printers or disc drives when the puter room and they sra sxpected to operate them.

This is a ridiculous state of affsirs. Operators should be informed of any pisns to enhance or modify the systsm, and they should be paid salary increments, accordingly. Too many installations take liberties in this regard and an operators' union might help to rectify the situa-

that promotions take place from

let's consider some of the estublished trade unions that have a significant number of computing staff within Hier runks.

where positions, such as lu the

TP section, have been awarded

Three of the main ones are TASS, ASTMS and APEX. In addition. There are thuse which are related to particular organisations and Industries, such as the CPSA und SCPS for Civil Servants, NUBE fur bunk smployees, and NALGO for lucal

chad like confetti PUNCH card chips, sometime called chad, con be a habit hazard. You, the tiny, obtain hits of card which secundate the bins of punch card development of they are inhaled or sale. If they are inhaled or sale.

If they are inhaled or getting to non-operations personnel. the eye, they are a source great discomfort and cases, demage, sometimes pu-manently. So when dispelled the waste from both onlines. Sadly, we have nu union. So offilmo punch card units, tr

> t can rocall saverst instinc of the chips being used be practical joko, such as what follow operator's bosts w jacket pockets were filled with tham. And no harm was dee. But romomber, the chips teals hazordous and don't treat the lika confotti.

cussed tha READER procedure, that part of the IBM OS operating system responsible for placing work on the systam in-

Now I would like to consider the IBM OS WRITER procedure which takes data from the system output queues and transfers It to the system output devices.

IBM OS supports 36 output queues, or classes, and each WRITER will handle a msxlmum of eight of them. The OS command to stert the WRITER has the following format: S Procname, Identifier, Unit

Number, Output Classes The iDENTiFiER parameter is optional and, in my ex-

perience, seldom included. Tu start a WTR procedure called WTR to printer 020 and serving output classes P, Q, R, I, 2 and 3, the following command is used: S WTR,020,,pqr12

But under certain circumstances, an IDENTIFIER might be included to good effect. For example, if the site runs several printers at a time it is necessary to know the output classes each of them is serving. The command used is as follows:

S WTR.020PQR12,020,,pqr12 Then, by entering the OS

DISPLAY command, any of the operators will be able to find out what each of the units is being. used for. Thus the master console operator is able to find out

contacting the operator tends the output, or unit records

Alternatively, the loss THER might be defined as the name of the person leading its unit. For example, if an openic called Mike is to be responsi for unit 022, the following on mand might be used to start to procedure:

### S WTR. Mike,022,,AXY23

unything with a bus structu

thun ubout 6 Mbyts5/seco

could be interfaced with E76]

Dr Stevens' article

controller can run up to

Mbytes (rom a single, si

launched

The WRITER procedure New micro range from TEI also responsible for punch mutput. In this case, it is often called WTRB, as class "B" is the A RECENTLY introduced rinigo of accepted norm for punched of microcompuler ayalama from Houston-based Texas Electronics Instruments is now being dis-Iributed worldwide by Abacus **Edited by Martin Banks** Computers, a nowly formed

> All the products in the TEI renge faature a 32K byte CPU Ihol (a axpendablo up to 64K, 2K bytes of PROM, Ihree perallal and three sarial porto, and o floppy disc controller ellowing e mixture of lerge end amail disc drives. Starting prices for the range are 32K RAM.

be given a helty boost by the purchase by the Inner London

Education Authority of about

thirty 380Z microcomputer sys-

lems from Research Machines of

Oxford. But effective use of them

will be seriously held up by lack

of truined teachers and appro-

priate software and teaching

Derek Esterson, ILFA inspec-

Inr for computing, said that Microcomputer Users in Secon-

685,000 of the authority's central dary Education, MUSE, Charles

funds have been allocated to buy Sweeten, while applauding

ahout 20 larger, disc-based sys- ILEA's decision to buy ull this

The systems are fully cumpat-ible with the CP/M speraling system end its range of utility programs, and ere capable of run-ning seftwere written in Cobel, Fortran, Super Resic, Pascel, RPO II and APL.

Abacua haa elso bear appointed to the Capartment of Industry's Mapcon list of approved microcemputar con

London schools to

plug inore equipment later on.

The Secretary of the Society of

the special control of the second

Our picture shows the TEI PT

get 30 micros COMPUTING facilities for Lon-tems with colour graphics, and equipment, said there was a don schools and colleges are to 10 or 12 smaller systems into serious danger that the money which it would be possible in would be wasted if there was not adequate centrul support.

Schools wanting a machine to There was a shortage everythemsalves will have to make a where, he said, of teachers with contribution towards the cost of direct experience of these abnut £1,200 for a larger system machines who reully knew what and £500 for a smaller. Colleges to do with them, and the amount will not have to make a conof software for use in the classtribution. Some machines will room was very limited be centrally based and mobile.

It was difficult, Sweeten said. to get across the idea that the computer is a tool and not just for playing games. He pointed to the experience of Humberside schools, where there was a computer library of 500 programs, and for a time 60% of the usage of these was solely on one for playing Startrek.

With the growth of home equipment such as educational calculators from Texas Instricidents, Sweeten suid, schools might well fall behind parents in providing facilities for children.

MUSE held a meeting in London last November, and was disappointed at how few ILEA teachers came, "The Midlands, Liverpool, and the North East are where things are happening in this field," said Sweeten.

Esterson agreed that ILEA was desperately short of experienced people, and would continue to be for a long time. The new equipment should help to motivate teachers to learn about the subject at home, and this would help to solve the problem, he said.

There was also a "large gap" in the availability of teaching materials, he said, which must he tackled by central government "The DFS is dranging its

There is some, but far too little, computer training in colleges of education, Esterson added: in-service training is only a short-term solution. He explained that spending money on hardware was not taking lunds away from training programmes, because of the way local government manages its finances in separate compart

It was niways easier to get

Raysolve is Data Logic's fast new operating system for data entry applications. It could make your data handling quicker, easier, more error-free than it has ever been. It makes other data entry systems look positively cumbersome. Not to say, extinct.

- Simple system definition by an operator, not by skilled software staff. All communication with the system by simple question and answer procedures. In plain English.
- Supports a wide range of peripherals.
- Runs on proven, reliable PTS100 display systems
- Full emulation for IBM, ICL and Burroughs terminals.
- Highly flexible configuration and expansion.
- Local or central data validation and storage. You choose

# Prime enters 32-bit minicomputer business with four new machines

32-blt machines has 2K.

THE latest entrant to the 32-bit memory while each of the other minicomputer business is Prime. which has weighed in with four 750. According to Prime they are 100% software compatible with the existing 18-bit Prime computers and run the existing

Primos operating system. new 32-bit computers and that

On the software side, facilities introduced by Prime for use with tha 32-bit machines include X25 support in the Primenet communications package.

tran 77 compilers and an Inter-Prime says that existing 16-bit active data management facility The top and machine, the 750, respectively, while the memory

Also new are PL/I and For-

some of the differences include a is about two-and-u-half times on the 750 can be expanded up to ger Instruction set. The 750 existing top end machine in the comes with a 16K byte cache 16-bit Prime range.

# London boroughs join ICL

yolve much mora in-depth pro-

The 450 differs radically from the other three new machines in that it will be offered purely on an OEM basis to systems houses and its price will be kept very low by supplying it in standard configurations and with no program compiletion facilities.

The 450, 550 and 650 can have up to one, two and four Megabytes of MOS memory.

# MP pressure

strategic director of Inmos to be ioft free of political pressures, seems likely to fell on deaf pars.

vestments.

We will be bringing Raysolve to a city near you soon. We think you should see it. ; Holiday Inn Birmingham 29th — 31st January Manchester

Grand Hotel 12th — 14th February North British Hotel 20th — 22nd February 27th February — 1st March Data Logic

5th - 7th March

13th — 15th March

London-NW1 Centre Hotel Ramada Dragonara

29 Marylebone Road

For literature and demonstration details contact Chris Rigler on 01-486 7288

Terminal Systems Division Data Logic Limited 29 Marylebone Road London NW1 Tel: 01-486 7288



Edinburgh

Newcastle

London

Bristol :

# What's your line? TIME SHARING BUREAUX who do not wish to take financial COMMERCIAL BUREAUX MANUFACTURERS OF TERMINALS and their agents, who LARGE COMPANIES with a potential telecomm MINI COMPUTER USERS

If you can identify with any of the above you should be speaking to our specialists who are qualified to advise. study and recommend according to your needs.

SERS OF WORD PROCESSING SYSTEMS who may

MHS Remais personnel have expanderable in step it experience in the design and implementation of all types of terminal based is stems as well as micro computers and word processing. We offer the able regist fucibiles on a wide range of equipment from leading manufacturers unlading Dun Dynamics, Tetas, Digital Transdata, Diablo, Olivetti, Newbury Labs, Tektronis; Lagr Siegler, Midlectron, Hewlett-Packard.

For more information contact Mike Brooke, Telephone Byllect 49511 & 49618

Specialists in the renting of terminals MBS Remain Aldwych House Maideina Road, West Byfleet Surrey KT146BA of microprocessors and micro- against in the rapidly developing computers have stopped being the "mind-boggling" wonders that some of the national press continue to see, many interested

people have started to move their attention away from the devices themsalves, and on to the more important question of aasily interconnecting tha beasts to the outside world, The problem of microcom-

usafulness, is liable to be one of . ia's 6200 family. the most important topics for micro computer users and de- insuit to injury, Dr Stavens the most important topics for signera during 1979.

The article by Dr Richard signed bus structurs known as Stevans on the S-i00 bus structure (CW November 23, 1979), has already atirred up a smail hornete next of controversy that has been reported on this page

According to Aylward, "this has been designed as a forward iooking bus that allows the full capabilities of the new ganerabefore, but it continues una- tion of 16-bit machines to be

The S-100 bus, by virtue of its precluding tha use of the smaller widespraad use amongst many and alower 8-bit machines. ween 8 and 16 bit machines."

Such a facility is not available contained and additional circuit board to perform the function.

Such a facility is not available contained and additional circuit board to perform the function.

With the E78 bus however, he calling that this is not necessary and development of E78 based of Gillinghem, written in response to Dr. Stevens' articla, starts by making this very point, and goes on to jist other failings of the bus for all micros, the bus for the futures. Having seen the sheer to E78 (in fact from reading the bedford. microcomputer manufacturars.

field of microcomputing.
"The original S-100 configu-

Major problem of year

will be variety of buses

ration was nevar Intended for growth," he writas, "or with any consideration for what the future of microprocessors might He quotes as an axample that

fact that, having been originely designed for the intel 8008, and "mutliated" for the 8080 and puter buses, thair vsriety and Z80, it cannot support Motoro-

omitted to mantlon a UK de-

fully and aasliy realised without

NOW that the actual capabilities that, he feels reflact bedly simplicity of interfaces for il, from things as humble us the National Semiconductor SC/MP through the immensely popular Nascon 1 to an interfuce to the DEC Unibus, I feel that E78 does for microcomputer hardware inamiger of Calcomp's Month what structured programming Aylward goes on to point out

> ditional advantage which could be very endaaring to microcomputer manufacturers. Up to the prasant date, he system will find no market outside that system. As an example he quotas the Tandy and Nascom I aystems, which both use tha Z80 CPU chip, yet aup-port devices and expansion

that the E78 bus has one ad-

boards are in no way interchangeable or related. Usars, therefore, can become trapped into a closed market. But this is not just one way, ha

iggasts. Manufacturars can and up

A USERS' group to while microprocassor developmed eystems has need formed attempt to kaep users up in the with new Intel produced a platform for the software and hardware and hardware.

mar apprenticeship schema.

to tackle staff shortages THE twin problems of shoringe and 19 chosen by the local author computer staff in local oritles after a recruitment

stitute will run six-month in- treinaes, taught by a lecturar tensive courses for teenage and a senior programmer both trainee programmers sponsored by the London boroughs' DP in early February.

The trainees will primarily be gramming practice than the senior executives want to live in school leavers aged between 17 usual four waek course.

government and unemployment campaign which includes local among school leavers ara being radio. They will be given an attacked by a training schema aptitude test but no specific organised by ICL and 16 London borninghs. ICL's Education in Each course will consist of 14

departments under a program. The 22-week courses will in-

on inmos A PLEA by lann Berror

> A group of Graster Menchester MPs are threatening not to vote for the government's Bill allocating more funds for the NEB unless it assumes greater control ovar the location of in-

They are furlous that the inmos Technology Centre has gone to Bristol rather than the Manchester area, claiming that

# Management changes at **IBM General Business**

Business division of IBM United Kingdom, Kenneth Woodword has been appointed assistent to Frank. Cummiskey, president of the General Business Group Internalia-nal in White Plains, New York, He was until recently general systems director, and prior to that General

General Systems divisional managar is Teresec Osborns, formerly General Systems sales menager, and 10 IBM cheirmen Frenk Cary In New

### **Memorex promotions**

Ed Picken has been promuted to the position of UK computer media seles manager with Memorex UK. Memorex UK. They are Jeramy Smith and David Minns. Smith was formerly a salesmen with Univec. He was previously computer medie sales manager for the Midlands. He replaces Andy Blyth, who has become computer media programme manager with Meniorex European operations. Nigel Chorley has joined support engineer from Control Dotn. where he was QA engineering

executives have been appointed for the South and West breach of

formerly a ealesmen with Univec, and Minns e selesman with Control Data John Staples has joined the Data. John Staples nos jomed the London and Eest district es e salesman responsibla for sales of large systems plug-competible peripherals. He was formerly large eccounts manager with IBM. Until recently a UK sales engineer with Data Data Competible Instrument Competible. Data Recording Instrument Com-pany, Mike Charter has joined Mamorex as a salesman for per-



Lieorge Nugalewski has become managing director of The Murketing Results People, a sister company to Concliniond, He was formerly sales manager with Xerox

Pout Websier has been appointed deputy injector contracts and secretary of the Electronic Engineering Association, He succeeds Tony Marshall who is retiring after 20 years. Surrey. .



John Wright, UK manoging direc-tor of SEL Computers, has been operations to co-ordinate the activ-Benefitz countries. SEL has also announced the move of its UK Operations to new offices in Suiton.

FEBRUARY?
AGM/ Distributed computing. BCS
Data Cummunications Group, Chemistry
Lecture Theatre, Birkbeck Cultege, London WC1, 1030.

Of imports and IBM. Or S. GIII, BCS liumberside branch. Willerby Manor

**FEBRUARY 8** 

### DIARY

JANUARY 24
May all and undermajer incidical elec-tronics, collequium (EE/JERE, Royal Institution, Albermarie Street, London WI 14 00 Register 01-240 1871 est 282

Control of large-scale systems, culto-quium IEE Savoy Place, London WC2.

Interfuring software. Study Group on Computers in Survey Analysis, City University, London, Details from John Utiling, National Childron's Burcau, 8 Wakley Street, London ECI V 7QE, Distributed computing — discussion and AGM, BCS Data Communications (400).
Vehicle contemp: exact algorithms, henristics and their practical evaluation.
BUS mathematical programming group LSE, Houghton Street, Condon WC2. JANUARY 25 1070,
Wird processing — practical techniques, N Barckley, BCS Kingston-on-Thames branch, Regional Management Centre, New Maldon, 1930.

Electronic news gathering, IEE, Savoy Place, Lindon WC2, 14 th By Inker only from the Secretary, 61-240 1871, ref. 18th.

Microprocessors, research and no rela-tion to manufacture. IEE. Imperial Col-lege. Lundon SW7. IA 00 Microprocessors in instrumentation. Dr Dr. Everett. IEEE/IEE. University En-gineering Labs, Trumpington Street. Cambridge. IS 00. Presidential address. Prol Frank Strange. ICS Covenies, brunch Lanch.

puting orchinques section institute of Mechanical Enginears, t Birteage Walk, London SWIHBJJ 1430. Computing meducation oreducation in computing. BCS Kent branch. St George Hotel, New Road Avanue, Chathom. Sunner BCS Coventry brunch Lanch-ester Polynechnic, Coventry, 1930. Where a date dictionary bis into data management, E. W. Hagsell, BCS Leeds brunch Parkway Hotel, Leeds, 630. 1945.
The benefits which electronic fund Film evening and social. BCS South
West branch Royal Naval Engineering
Unilege, Manadon, Plymouth. 19 ub.
JANUARY 25-28
JANUARY

JANUARY 25-28

Meeting. IBM CUA Programming group. Mostly Hotel, London. 14.00.

JANUARY 25-28

Privacy and security in data processing. R. R. Tozy. BC's Statfordshire branch.

The Crown Hotel. High. Street. Stones. BC's Bediardshire branch.

The Crown Hotel. High. Street. Stones. BC's Branch and the processing of th

Chishan, Ampu JANUARY 30

A structured solumare design method. J. P. Wankowicz, BCS Newcosile branch, Burras Bridge Buildings, Newcosile University, Newcosile, 19.09.
JANUARY 3. FEBRUARY 12 Systems thinking, Brian O'Heron, BCS, Reading branch, 1CL, Loveloca Road, Bracknell, 20.00.

Data production legislation T. R. R. Sizer, BCS, Edinburgh branch, Heriot-Well University, Edinburgh, 17.30, FEBRUABY I

rene OABY I
Microprocesors in adjunctive appli-ration, It & Microprocessor specialist group. Published of Central Landon, 308 Reg. it Street, Lundon WI, 14,00.

Bracknell. 20.00.
Computers in X-ray scanning, a break-through in diagnostic medicine. B. J. Walmatey. BCS Croydon bronch. Fairfield' Hill, Croydon. 19.15.
Computer sidad design of printed circuit boards. K. Bennett. BCS Herlow aub-branch. Harlow Technical Collaga. (larlow, 19.30.
FEBRUARY: 13-14
Praction) application of artificial intel-Presidential address. Prot Frank Practical application of artificial imelligance. Intolech. Ragent Centre Hotel, London, Tel 0828 35031 Summer BCS Merseyside branch, Com-puter Lub, Liverpool University, Liver-pool, 18 10. FEBRUARY 14 **FEBRUARY 8** 

AGM, VME/K subgroup, 2900 User Group Details: Or Sprait (0227) 68822, ear 627.

De copporation in medical computing Dr. R. Borber, BCS East Anglia branch, Addenbrookes Hospital, Hills Road, Cambridge, 19.00.

FEHRUARY 8

Alvanced memory devices, D. Parrati, BCS N. W. London, branch, Railway third, Greenlord, 18.30.

Birmingham branch, Priory Dene Hotel, Edgansion, 18.30.

FEBRUARY 14

AGM, VME/K subgroup, 2900 User Group, Details, Or Sprait (0227) 66822, est 1920.

PEDRUARY 5

Public priority for internelectronics, Nigel Kingslay, BCS London branch, Nigel Kingslay, BCS London branch, Metrocomputers, inc. electronic accountants Richard Waller, BCS Codens, 179 branch/ICA, Venue 10 its sinourneed, 1930.



a Minicomputer and Terminate division in Hamai

Hempstead. The boys from Haberdashers' Aska's Honeywell's promotions monager (extrema loft of our

of the Unitech group. He was until recently development services manager with Sealectro. In his new education consultant for southern England for BIS-Deltak, and John Heaford os education consultant for position he will head a development team which will broaden the Lee northern England, Elre, Scotland and Wales. Sefore joining BIS, Amor worked as a systems energyst for the British Oxygen Company, and Hea-Nigel Shaw has joined Eurodynamics-Denwood as techniford was operations manager for

Jeff Device hes been appointed chief engineer with Lee Green Pre-cision industries, which is a member

Thomas Onnahue, formerly manager of general occuming at Univoc, has joined Data General as controller for the UK and Fire. He will be based at Data General's new headquarters at Honnslow, which is occupied in September.

Paul Dayles has joined Solid State Controls as marketing manager. He was formerly with Eurotherm Sysect management and company tems Group where he was industrial technical standards. He was preseles manager, and before that with lufrs-Red Engineering.

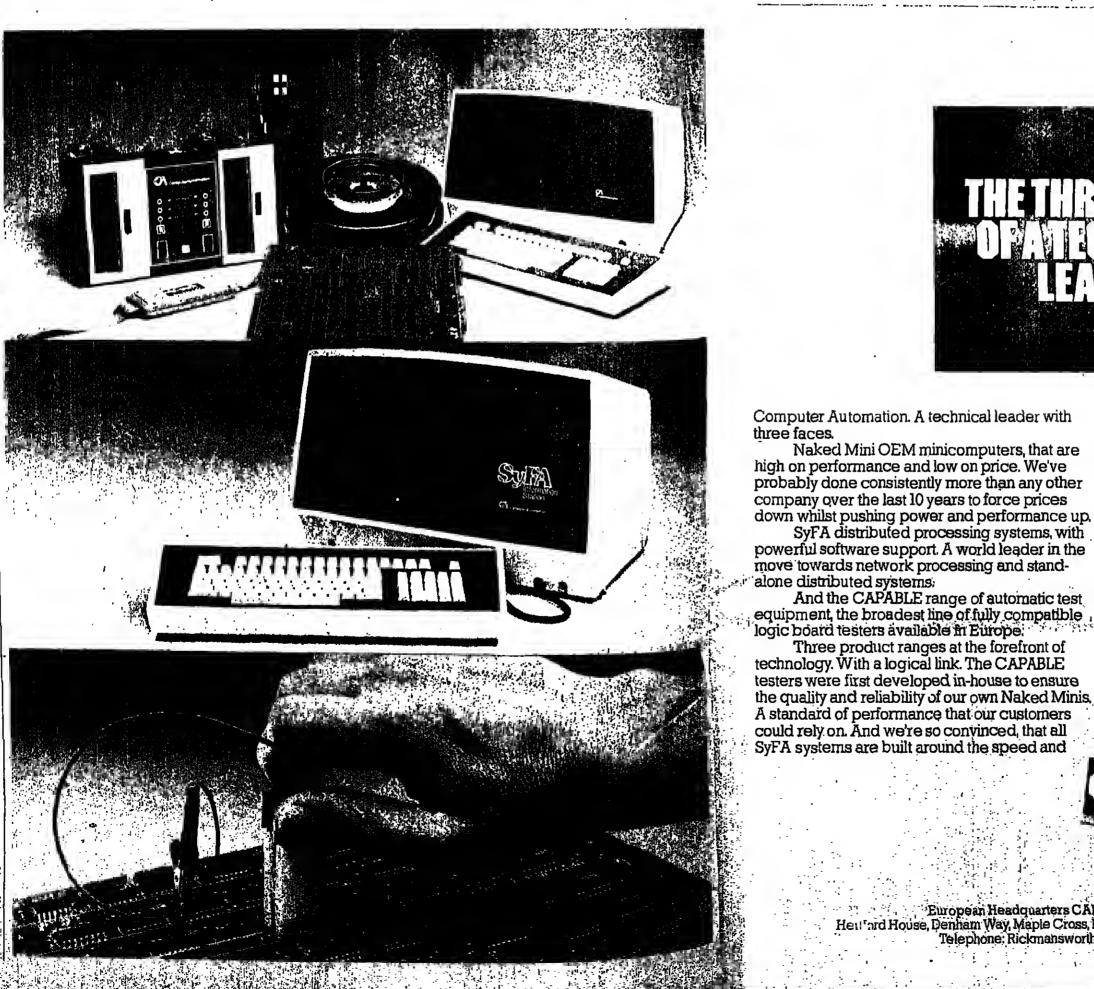
**New marketing** director for Plessey

**Edited by Nancy Pocock** 

PLESSEY has appointed a new director of marketing for in Actionles and Communications dis-sion. He is Jim Condult, formedy commercial manager for Slatemas de Fransporte in Brazil. In his new resistion be will be based as the persition he will be based at the com pany's lifting headquarters and will report to Alan Cormack, managing director of Plessey Avionics and

## **Call** for papers

PAPERS are invited for the fourth is ternational Conference on Software Es-gineering, to take place on September 17-10, 1979, in Munich, Germany, Ty-conference will bring togethe conference will bring togethe researchers and practitioners to disease the state of software engineering and at further progress, and is sponsored by the HTE Computer Society, the Europea Hesenreh Office, the Association in Computer Machinery, and the The 686 is close the Informatic Residue to papers is February 1, 1279, to the frequency of the Programme Charman, Professor M M. Liberton, Imperial College — CCD, F. Ducens Line, London SW7 2BZ.



# Pos range from Systime £1m into Scottish plant in the state of the sta

Systime. Celled Micro-Pos, the erminate can operate either i atend-elono mode or online to a Systime computer vio a etenderd V24 interfece.

Each Micro-Poa terminal to besed around on Intel 8080 microprocessor and includes a keyboard with 12 function keys, en intagral cash drewer, an alphenumeric receipt/eudit roll printer, en 8-digit LED diapley and a punched bodge reader. The torminel con generate 16 individual prompts for the operator.

Options include a megnetic stripe bedge reader, a bar code roader with a wend, a hand-hold OCR render and a cassette uni for the stand-atone varsion. The standby with an online mortal. Micro-Poa pricos rango tron £2,600 to £5,000.

According to Systime the comphosis will be un reing the terminals as part of an intograted stuck control and tran Inclian accountly avalem.

### backed by a further £250,000 from the Scottish Development Authority, is to be made by Honeywell Control Systems in its Newhouse, Scntland, factory. The money will be used to estnblish a new production line to mnnufacture allvanced process control equipment, including the TDC2000 range, and a new microprocessor bused system, called DCP7700.

First products from the new

line are scheduled to appear in

November, and the investment

will result in the creation of 125

new jobs, including 60 new high

technology occupations. Most of

the investment will go to the

introduction of alvanced com-

ponent handling facilities, computer-controlled com-

poment distribution systems and

The money from the Scottish

Development Authority.

Honeywell's landlords in

Newhouse, will go to renovating

the factory building, though no

Naked Mini OEM minicomputers, that are

move towards network processing and stand-

equipment, the broadest line of fully compatible

logic board testers available in Europe. Three product ranges at the forefront of

the quality and reliability of our own Naked Minis.

A standard of performance that our customers could rely on. And we're so convinced, that all

SyFA systems are built around the speed and

technology. With a logical link. The CAPABLE testers were first developed in-house to ensure

test and diagnostic facilities.

flexibility of Naked Minis. All backed by

throughout Europe.

comprehensive technical support facilities

manufacturer in the world, in terms of units

that lead. Then we keep improving them.

them to your own benchmarking tests.

where we are now the third largest computer

shipped. The secret? We only develop products

three product ranges that we would like to issue

an open invitation. Come and see them. Subject

Then join the growing band of our satisfied

ComputerAutomation

We've got enough confidence in all our

In only ten years we've grown to the point

ilie future.

nicroprocessor, with some 16K

bytes of memory, it provides

what Honeywell deacrilles as

"previously impossible levels of

Managing director Jim McGregor sees the investment,

AIMING for a bigger slice of the

Perkin-Elmer Data Systems has

introduced a Limity of low-cost

beginning for Newhouse, "Some R and D effort has already been put in at Newhouse," he said, "and this will be expanded. There will be new products

using advanced digital technology coming out of Newlmuse in The new DCP7700 digital control programmer has been available in America since Sen tember. Based on an Intel 8-hit

Programming is by a keylant for both data and operating conunands, with read-out from LED digital displays. Program storage is in non-volatile

point versus time programmer with a three-mode controller to provide an accurate, flexible and compact control system. Up to nine separate programs, consisting of up to 200 functions, including temperature ramps and soaks, and event switches, can be stored in the system.

# UNDER a one-year prior scheme, selected fire brigades to

the UK will be able to get emer gency information on over lunus themicals and their acendent via Hazine, a chemica database available on a 24-hou basis from BCU. Datasolve on the

NEWS IN BRIEF

Association for Women in Computing treexchange ideas about their jobs and promote their

The secretary, Anna Cochran

of Bell Laboratories, says then

aims are to form a women's

communication network so that

they can "get to know the righ

people," to promote technica

ducation for women, and ir

em ourage women to follow

For emergencies

**Association** 

for women

career development.

### **NCR** for artists RELVES, manufactures of

artists' materials has installed an NCR 8250 system to handl its order processing stack control and sales beiger applica tions. The system includes 128K princessor, four VDUs, 2

### Robots seminar

TUC hair-day conterence on mi distrodrations (CW, January 4), is to be bold at Nattingham Uni-versity. It will bring logather sports in roboties to grva tidica on applications, now emainment frends, and the social and sconouse aspacts and gavern-Thore will be a large display of ndustriel robots and the event Association, Bedford, will take place butween March 27 and 30.

### DG on the move

TO meet the growing business ( the City of London, Dat General has moved to large offices at Irwin House (4) floor). 118 Southwork Street London SET DSW, Tel: 10 -0.1

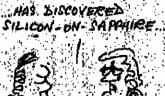
### Expanding

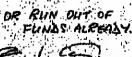
TO provide more space for ex panding business Langton In formation Systems has moved to 133 Oxford Street, London WII ITD, Tel. 01-439 0366.

Liveware Saga











European Headquarters CAI Limited (Computer Automation) Heil and House, Denham Way, Maple Cross, Rickmansworth WD3 2XD, Hertfordshire, England Telephone: Rickmansworth (09237) 71211. Telex: 851-922654

### Perkin-Elmer offers Series Sixteen family of low-cost hardware packs commercial systems market. Sixteen, which the company is group of lour new 16-hij machines from the Interdara offering on an OEM basis to division of Perkin Fluxer, each of which employs MDS memory instead of their ore provided with the existing buterdata minteron-The new machines are soft-

ware compatible with the existing 16-bit Interdata minus, and Perkin-Place has enhanced ats OS 46 operating system with a learner valled Resonres Sharing, RS, which can support up to 16 terminal users and which extends the program development capacity of 148-46 RS 480 provides batch proces

sing tachilles.
Fortian IV and Basic are already available for use with Series Sixteen, and Perkin-Elmer is entremly developing a ver against Colod for the waterns.

Perkin-Fluor points on that the Series Sixteen systems are not being offered parely for commercial applications but that they are intended to increase the proportion of its business in the commercial systems market.

The four systems in the series are the 1615, 1624, 1625 and 1635. The 1615 in its basic form comes with a 32K livte memory, a VDU. a printer and the OS, IB soft. ware, and costs £7,730, while the basic 1635 includes a 128K byte memory. 10 Megabytes on disc and a VDU and marrix printer for £20.360.

The 1635 processor is much more powerful than the most powerful existing 16-bit Interdnia machine, the 8/16E. Disc storage can be expended to 300

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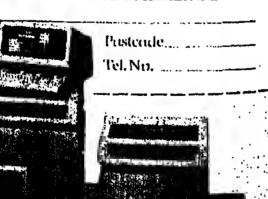
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# Freud's Official Information Bill a landmark

cluding computer files, will have to be accessible to the public if Clement Freud's Freedom of Information Bill. due to have its second reading on January 19, is passed into law. Every government department, and the National Health Service, will have to produce complete indexes and guides for the use of members of the public to enuble them to obtnin any document they wish, subject to certain restrictions as to defence, foreign reintions, and law cufnrce-

The chances that the Official Information Bill, as it is called. will actually be passed into law in its entirety are slim, owing government and dissension in the ranks of the Bill's supporters (CW, January 4) but in any event the Bill is a landmark in the efforts of backbench MPa to exert more chutrol over the Civil Service. Its supporters come from all parties, and in addition to Clement Frend they include David Strel and Richard Walowright (Liberal), High Fraser and Jonathan Aitken (Conservative), Jeff Rooker (Labrur). Margaret Bain (Scots Nnt) and William Craig (United Ulster

the Bill was drawn muby the

independent group that studies public policy and which is funded by Rowntrees. In its present form the Bill does three separate things. First, it repeals the contection of crime; those to do

roversial Section 2 of the Official Secrets Act 1911, which is the blanket prohibition of the unauthorised diselosure of any government in-formation and which has led to several widely-publicised Second, the Bill establishes

the right of access by every person to official documents subject to various exceptions which it lists, Rules are impused on government de partments saying how they publie in this

Third, the Bill fills in for the repealed Section 2 by establishing same criminal offences for the unauthorised disclosure of information relating to defence, security intelligence and "releatifiald ndividuals", and any information likely to impede the procention or detection of crime. The classes of documents

that are exempted from dis-

he plenty of disagreement need elosure are these: those conwhat is or is not unreasonabl erning defence, security, or foreign relations (but not in-A department receiving a request must reply within 20 days, either with the copy or eluding the Common Market); those whose disclosure is pro-



documents about oneself); and

Cahinet papers, up to five

Barring these, n photocopy

years after they were written.

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must be supplied to anyone

who asks for nne. The Bll

states specifically that it a writ-

duced from a computer, and

wants, that must also be pro-

viden. There is however a pra-

viso that if emplying with a

request would "interfere un-

reasonably" with the business

of a department, "having

regard to any difficulty that

would exist in identifying,

locating or collating ducit-

ments containing relevant in

formation within the filing

system," then the request car

lie refused. There will clearly

ten document could be pro-

refusal, also, outlining the applicant's right to appeu with legal proceedings; those to do with an identifiable indirect to the Onibudsman (with nu MP's intervention dividual (other than the person necessary). applying, so one can ask to see Disclosure of documents to

dn with the "formulation of policy" can be deferred until some "particular event" or administrative action, "when it is reasonable to do so in the juib lle interest", another vagne provision. Papers containing only factual information, and scientific and technical reports, cannot be so deferred that is what the applicant

Every government department is required to publish a Code of Goldunce providing all the information people will need to obtain access to documents. This will include a guide o the cutaloguing and indexes in the department. Clearly many indexes will have to be reconstructed to make them understandable by lay people. Departments will be allowed to charge small fees for the naking of copies. For comment on the issues

avolved in the Freedom of Information debute, see CW. January 19, August 24 and

# Kit for information systems planning

COMPUTER WEEKLY, January 18, 1979

INFORMATION systems planning. Implementation and management can he alded and supported by a kit now available from the management consultantancy SIMPACT, Called PROMPT II, the kit is the intest development of Simpact's PROMPT, Project Resource Organisation Manpower and Plnnling Techniques, system.

Set up in 1975, Simpaet has just moved into a new headquarters at Shedfield, near Sauthampton, a large Jacohean-style mansion that will accommodate Simpact's training courses, the other side of the firm's business. The courses enver topics like technieal standards, information systems network planning, organising project teams and most aspects of structured program-

The PROMPT II kit comes in

through a predefined sequence mented and operational into PROMPT II is designed for

lopment, installation and opera tion. A smaller version calle Mini-PROMPT II is available fo PROMPT II and Mint PROMP ll cost £4.000 and £8.000 resue.

sold in North and Soul America and Israel by Auerhag Simpact Inc, u firm set up joint group of Pennsauken, New Je

ities for IBM and ICI, mainframes are now available with the Qantel range of small business computers introduced to the UK market by General Computer Systems (CW. January 11).

IBM users are offered a System 3 HASP multi-leaving terminal emplator that recoires a 16K partition in a Qantel system and also an IBM 2780 capitator that runs in an 8K partition. Inaddition, Qantel now has a 3780 emulator and is developing a communications controller that will be able to carry out Synchronous Data Link Control, SDLC, and High-Level Data Link Control, HDLC.

GCS in the UK can provide a

-ptfer 7502 laatch mode candatic farilities for communication with a 2000, GCS has provide these facilities for some time of its 2100 series of key-to-dis

active terminal for use with the Quited systems that will be ab

GCS itself is selling the Quit systems to lag commuter users machines, particularly the 2 loppy disc based system, will distributors appinted by GC The first such distributor is V

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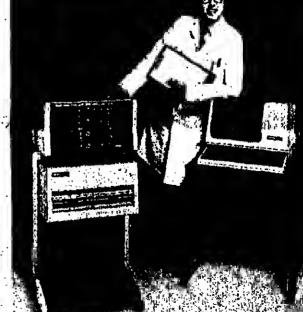
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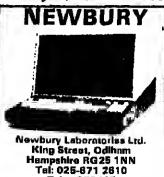
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# **Systime** acquires MBM

country has been formed by Systime's acquisition Northampton-based Midland Businesa Machines. Both firma | technological development specialise in systems configured around Digital Equipment com-

Systime is by far the bigger of the two firms, with a staff of 480 and about 400 systems installed Its turnover in its 1977/78 finan cial year was £9.1 million (CW, December ,21/28, 1978). MBM will increase Systime's head count by 120 and add about 100 machines to Systime's customer

The Northampton firm chalked up s turnover of £2.7 millinn lasi year and Systime is forecasting that the turnover of the combined operation will approacii £20 million in 1978/79

Unlike Systime, which builds a high percentage of the kit that it sells, MBM has always bought in monst of its hordware. MBM has concentrated on software development and has produced a set uf commercini software packages that it sells with its mahi product, the 7000, a system configured around the DEC PDP-11/34.

# **BL** Cars orders 50 ICL 1500s

THE drive to increase the penetration of the ICL 1500 intelligent terminal in the packaged systems market is meeting with success, and the latest coup is a £750,000 contract from BL Cars for 50 1500s.

The machines are for use by Austin-Morris and Jaguar Rover Triumph dealers, and tai iored software for accounting vehicle and parts stock control payroll and management repor ting will be written by iCL Dataskil.

The terminals will also be able to communicate with other BL Cars computer systems, and the BL Ltd division will recommend the 1500 system to all its 2,000

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This issue also contains a special publicut, which shows, by means of coloured charts, how the lonosphere behaves with report to critical propagation fringuishes. Just part of the excellent value Wireless World brings its readers every month—for only ADp. And in a sedition to its high justicies on both practical and theoretical aspects of electronics, it has pages and pages of job advertisements for the effectionics professional.

# 'About-turn likely for distributed processing'

processing is about to reverse direction. The rapid pace of coupled with the equally rapid rise in the cost of staff is proment in which many of the current argumanta for decentralisation are becoming obsolete.

This is the view of Zenichi Fukuda, a computer systems engineering executive with Fujitau in Tokyo. Fukuda haa developed his thinking as a result of his experience in deveioping new systems for Fujitsu customera, and he presented a paper on the subject at the International Conference on Computer Communications in

The paper provides a nober onalysis of the merits of centralised and distributed processing, and is in no way a polemi-cal document. Throughout Fukuda is careful to relate hla arguments to the needs of users. If one were to criticiae the document, it would be on the grounds that he falla to define priced minia and micros, had There were two main reeaons for his terms clearly enough. He says enough to establish his case that centralised computing is of greater Importance than it is generally made out to be, but weakens his point by not distinguiahing between distributed

processing and distributed data entry and, on occasion, con-The distributed processing philosophy, runs the argument, first gained strength during the

period of worldwide lov economic growth during the

This intensified competition and so drove companies to find new, more sales-oriented forms of organisation in order to compete more effectively.

The result was a distribution of responsibility from the corpo-rate centre, with the formation of product group divisions in heavy industry, and market group divisions in the office quipment industry.
But it was the smaller com

panies, tightly co-ordinated and vertically integrated, which took tha lead in developing new

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Pattems	1	2	3	4	<b>.</b> 2
	C	Centralised		Distributed	
ftem	Batch	RJE	Online	Beich	Online
End users' setisfaction	5	3	4	1	2
Realisation of system needs	5	3	1	4	2
Costs (computer plus lins)	1	3	5	4 .	. 2
Number of computer etaff	Б	3	1	4	2
TOTAL RATING		_			

Fukuda drawa is that distribu- economies of scale which can be tion of data entry and billing is realised by centralisation. helpful in improving marketing, but centralisation is still essential for control of salea and pro-

Economic factors are now in- was a dye-worka, which had creasing the value of centraliaa- previously had five divisional tion. The introduction of chip technology, leading to lowspurred on the development of distributed processing, but now large-scale computers are themselves undergoing a period of dramatic price reductions.

Furthermore, the rapid and continuing rise in people costs, the change-over. Secondly, the which started with the oil price company wished to chonge to cessing as ngainst batch. increoses, provides a strong argument in favour of the

EXECUTIVE

nline working, and a system of he cupacity and enimplexity required simply could not be supported divisionally.

The second compony was in he oil business and had a netork of small enmputers linked o a centroi inculum-sized comuter. The company was exeriencing deinys in processing, eading to lack of timeliness and ut-of-date informatian. This was overcome by changing to a large centrul mainfruine. A byproduct was a reduction in the number of programs run from 1,000 to 400.

In conclusion, Fukuda summarises computer systems into five types; centrolised hatch, centralised batch with RJE centralised online, distributed tch and distributed online. Rating these in order of merit according to a number of cinaracteristics, he arrived at the position shuwn in Table 1.

This shows clearly that the operative question for planners relates, not to the merits of centralised versus distributed proestimated at \$40,000 a year after cessing, but to the overwhel-

-NICHOLAS ENTICKNAP

# Investment analysts predict a strong year for major mainframers

Fukuda quotes two examples

of companies which converted

from distributed processing to

centralised processing. The first

computer installations, each of

which operated independently.

The use of five separate com-

puter departments involved a lot

savings on hardware alone were

expensive duplication;

America will experience a "mild" the telephone industry will not receasion," the computer and do as well, and that for such at Drexel Burnham Lambert slowdown foresee a strong year for com- imminent. puter companiaa, particularly the major mainframe makera.

In a peir of reports describing the outlook for the computer, atudies of the computer and industry and the telephone in-telephone industries. dustry, DBL's analysts, Horry Edelson and Sugan Hirsch, state terise the meinframe industry es

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DESPITE expectations that any great extent but note that ls probably

> The forecasts are based on an ovarail economic analysis by DBL brokara and on in-depth

Edaison end Hirsch characthat "mainframe computar being realliant in the face of operations will not be hurt to recession bacause rental and

communications stock analysts companies, including AT&T, "a" to 10 months' production at curfuil order books, as much as six rent rates; becouse inflution often stimulatea automatinn, and inflation is expected to continue at a reintively high rate; and because half the revenues of American inninframe makers come from abroad, whore DBi. expects demond to grow in 1970

over its 1978 rate. Among the moinfromers, IBM has the highest hncklog, which the onalysts put nt 86% over last year's, and the highest proportion of its income from rentul and service, 61%. Control Doin, with a backlog that la now up hy 28%, derives 51% of its income from rental and service. Burrougha, with o 15% increase in its order book, gats 44% of its in-

order book, gats 44% of its income from rental and service.
Howevar, the enalysts point out, CDC gets mora than holf its income from business other than computars, mainly financing through its Commercial Credit group, end thus may actuelly be more vulnarable to a receasion.

Similarly, Honeyweil gets 62% of its income from the manufacture of controls and another 13% from defence contracts. Sperry Rand, parent of Univac, also has lerge non-computer operations, a farm equipment operation that brings it 32% of its income, and a hydraulics business that accounts for 15% of the profits.

From iCL's point of view, in some in the heady early days the will be by no means universione. In the heady early days the National Enterplies Bond, when Tony Bann was industry when Tony Bann was industry been presaure for the safety ment to buy tha full please bought only enough to buy the safety of its income from the manufacture of controls and another 13% from defence contracts. Sperry Rand, parent of Univac, also has lerge non-computer operations, a farm equipment operation that brings it 32% of its income, and a hydraulics business that accounts for 15% of the profits.

the moncy to bolstar ils cash

IN e dani which will further en- Other US federal hance the worldwide reputation reported to be a of Scicon in the field of mather interest in the sour or Scicon in the field of mather interest in the matical programming, the One result of United States Air Force is to persons with sor lease the company's Sciconic has been a little and MGG mathematical promise to the gramming packages will now be systable as The contract, said to be size tisers especially in the systam of the contract, said to be size.

gramming packages will how be available.

The contract said to be size users especially if the being a specially of the being a specially of the being appointed agent in the consultance of the US. Control Analysis (Sorp. founded in the said)

# pulls out

Plessey

government attitude, public an mey could also provide a posihie source of investment

On the office side Plessey has long been interested in a newriage between its own conmunicutions technology and ICL's computer technology ba exploration of the possibilities over several years led to the was no prospect of significant collaboration. Plessey therefor decided to sell the investments a propitious time, and final institutions at 415 penca a shee a discount of 28 pence on the ruling price.

Plessey choirman and chief executive Sir John Clark sal this week that Plessey is thinking in terms of becoming an office systems house, buying in tire elements of the automa office and configuring them but

It aiready has a digital private telephone switching system, the Plessey PDX, huilt under licena from Ridm (CW, February 2) 1978). Orders for this already stand at £15 million, and Sir John has airendy halled the prefluct as the cornerstone of an entry into the office syslem market (CW, August 17).

Since then, the company has introduced Japanese digital fasimile machines to the UK mer tet under an agreement wit Sciences of the US and their joint subsidiary Panafax.

Piessey is also as experience as any UK cumpany in writing software for the DEC PDP i minicomputer line, making lis strnightfurward task to put together a word processing sys-tem. The company could also office equipment field, although Sir John says that nothing i

Taking Plessey's statements ubout the munies at their fact value, City observera are bemused at Picasey's apparent short term intention to use the proceeds from the sale to reduce its cieht, puinting out that the investment in ICL could have yielded as much as £11 miller gross this year, as against the

reduced interest payments.
The suspicion remains in son quint ora that Plessay made the

# USAF leases Scicon package

# DATA SYSTEMS NEWS

# The new big name incomputers

As industry leaders in high performance minicomputer applications, Perkin-Elmer Data Systems, formed in 1976 as the new computer Another products group within the multinational Perkin-Elmer Corporation, is set for major growth in large

Compec winner receives prize



a £600 holiday for two in Tenerile.

The presentation is made by Gordon Ambidge, Marketing Manager of Peikin-Elmer Data Systems, with Tim Mariton, Systems, with Tim Mariton, Northern Region Sales Manager. The competition was for visitors to the Perkin-Elmer Stand, who were asked to enter their estimate of the total attendance at Compec. Mrs. Broadley gave an estimate of 28,567, closes to the actual figure

Turnbull & Co, who in

addillon to their normal

United Kingdom and foreign

business are also market

makers in the Eurobond market, are implementing a

new Dealing and Settlement System as the second phase

of their recently commis-

stoned computerised

arbitrege price display and

foreign exchange conversion;

FIRST PHASE SUCCESS

The Perkin-Elmer name has been respected worldwide for 41 years in precision optics, instruments and other high technology products for all types of inclustry. For governments, medical institutions, moversities and scientific laboratories

the computer industry was recog-used by Perkin-Hiner as a logical area for expansion for a company dedicated to high tradiology TECHNICAL LEADER

As a first step, in 1974, Perkin-Umer acquired Intendata, already established as a technical leader in

Femrinals Division was lounted when, fullowing the surcess of the Carousel printer, it was decided to develop a complete range of video displays and printer terminals

Later in 1976 Perkindline acquired Wang on in a feading manufacturer of mas storage devices, thus adding an interrelated and interdependent complement to Interdata's minicomputer line and Terminals Division's input/output

Thus, the integrated Data Systems Group offers customers the benefits of a single vendor for a broad line of computer products and complete systems with a background o major Innovations, such as the list minicomputers with architecture, Writable Control Store

and Multiport Memory.
The Group is exclusively dedicated to continued advanced innovations involving radically different technology concepts. With the fiscal strength of the Perkin-Elmer Corporation as a base, Perkin-Elmer Date Systems is able to

System design and application software for both phases have been undertaken by Triad Computing

Systems Ltd, who selected an-

Interdata 8/16E with 126KB of memory and 10MB of disc storage for the application. The choice was

made after careful asamination of available hardware and was based upon the particular suitability of interdata processors for multi-programming and multi-terminal applications.

COST EFFECTIVE

Further considerations were the

lavourable cost/performance ratio

Sirauss, Perkin-Elmer Data Systems.

The decision to buy the interdata and the ease of system axpansion 7/32 follows on the success of the due to total upward compatibility in first phase, based on an 8/16E from the interdata range. The lirst system

# processor order from Link-Miles

(irm order for lour Interdata 8/32 computers with shared menury has been placed Perkin-Elmer Dala Systems by Link-Miles of Lancing, Sussex, one of the world's major flight simulator manulacturers.

### STA HARBIER

These will perform the total realtime processing and criniful data function for the very advanced full motion flight simulator for the Sea Harrier under rievelopment by Link-Miles for the Ministry of Delence, which incorporates Link-Miles Advanced Simulation Technology

Choice of the Interdata 8/32 for this system, which brings the total of 8/32's ordered by Link-Miles in the past 18 months to an impressive 13, was influenced by its acknow ledged superiority in rapidly addressing very large areas of memory, unique shared memory capability and high reliability, coupled with Perkin-Elmer's valuable experience gained through similar involvement In the US-

The proposed Eurobond System is

a sophisticated one which will give

immediata access (through that visual display units) to such infor-

mation as clients' holdings of bonds, honde in trensit, outstanding deliveries, status of contracts and, most importantly, dealing prices and positions.

BRUSSELS LINK

Perkin-Eimer is elso supplying ITAM (Interdata: | Telecommunication Access Method), which will allow the system to be lighted with the Euroclear bond clearing system computer in Brussels. Each day, all the relevant lifes holding Euroband information will be updated to reflact Euroclear's actions.

# Major new 16-bit range launched

The new family of packaged grocessor has 128KB of 750ns MOS memory with ECC, 10MB of disc, called interdata Series lloppy disc interface and matrix inlerdata Series Sixteen, is based on a new range of 16-bit processors and is designed for OEM's and syslem houses in the business and industrial

markelplaces. To quote Marketing Manager, Gordon Ambidge, "Series Sixteen provides high-technology, feature oriented systems that are available

at lower cost than existing products.
It provides OEM's with flexible conligurations, from entry-level to large memory systems, that can be tailored to specific application needs — and expand with the application."

Interdata 7/32 selected for Eurobond dealing system long software and software integraled, all four Series Sixteen packages can be used for application, work at soon as they are installed.

went live in mid-1978 and proved to be an immediate success.

System 161S, priced at only £7,730, and aimed at distributed e7,730, and almed at distributed processing or small stand-alone applications, includes a Series Sixteen processor with 32KB of 900ns MOS memory expandable to 64KB, vidao display unit, paga pilnter, memory processor intagrity test and 512KB of ftoppy storage.

System 1674, priced at £12,220, offers a processor with 64KB of MOS memory expandable to 256KB and a CP120 matrix printer, as well as all the other 1615 features.

System 1525, at £16,740, is almad at multiterminal system applica-tions and has 10WB df disc storage. An optional libering point processor is aveilable.

System 1635, top of the range at \$20,360, offer mentional partors mance; and data integrity. The



FLOATING POINT hardware Hoating poin

and Double Precision variables—in addition, the compiler allocates & floating point registers to user programs for the evaluation of

RUN-TIME LIBRARY Tortian VII programs are ang-mented by a comprehensive set of our time littracy (RII) routines there include mathematical funtions, language extensions, such as bit and byte operations, list processing operations and real-time extensions, such as external event interactions, analogue/digital conversions, multi-tasking and real

time tile management HIGH SPEED
Also available is a high speed
Fortran Enhancement Package
(FEP) foll mathematical functions

which makes use of Wutable Control Store (WCS), containing routines, which execute in less than hail the time of the corresponding

# family, as well as a full range of high-level data communications products to allow communications **Publishers Ginn & Company** who know how to

read between the lines

booked an Interdata,

An enhanced operating system and a full suite of languages have been provided for the Series Sixteen

transaction processing system for their sales order tracking trom

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# Courses not available to many systems analysts

I AM in full agreement with the points raised by Owen Hanson In accepted on a post-graduate his article, Training of Business Systems Analysis (CW, December 14, 1978). Meny systems enalysts do not have e good general knowledge of the busi-ness environment. This is not surprising as the skills of programmers, systems designers and junior analysts, the steps on the career path to a system enalyst, are technically rether than siness orlented. The problem for the enelyst is how to gein

universities and polytechnics provide business enelysis courses, but unfortunately these ere not eveilable to many analysts for the following reasons:

or private study and correspondence courses available

the possibility of introducing the

SIR database system at Imperiol

College Computer Centre.

cientific Information Retrieval,

It can be difficult to be course without a first degree.

It can be very difficult to obtain the necessary financial support. Employers are reluctent to release staff for one to two year courses unless there is en immediate benefit to the company; expending job opportunitles is not a company benefit. Few analysts are likely to be able to finance themselves (a consequence of the recent rise in uni-

The location of the university It is commendable that the or polytechnic may not be con-iniversities and polytechnics venient so that part-time and evening courses are not suitable. There is clearly a need for

I should be very grateful if they

would contact me, so that we

ntuy learn of various aspects of

WE are currently investigating Weckly have experience of SIR.

organised as poat-experience courses by the Open University. Some sultable courses do exist. There are correspondence courses for the BCS Part I and the Certified Diploma in Accounting end Finence, but I do not know of any course

throughout the country. These could be supplemented by evening courses at colleges of further education or could be

which covers the range of sub-jects included in the City Uni-

versity's MSc. Perhaps Mr Han-

son could devise one.

JUDY COX

Finternational Ltd.

Wanted—information about SIR

would of course be treated as

onego Computer Centre. its use. Centre,
If any readers of Computer Any information given to us London, SW7 2BX

To: The Editor, Computer Weekly,

Dorset House, Stamford Street, London SE1 9LU

# Conforming to Third Normal Form principles

l NOTICED Bob Dale's letter regarding the Fourth Normal Form. rm referred to in Max Stewert's relational database series. (I especially noticed it: because Bob Dale IIves in the next street to me although 1 have never met him myself.)

Fourth Normal Form was first referred to in an article in the Communications of the ACM in 1976. I do not know how well this paper has been accepted internationally, but certainly in this country it has been subject to much criticism from those

who advocate Third Normal

As far as I am aware Fourth Normal Form arose from the fact that hy applying the standard First, Second and Third Normal Form coutines, une did occusionally obtain an enswer which was not in Third Normal Form form and hence a subsequent fourth Iteration was

own methodology (Entity Analysis), have considerably

evolved the techniques available

to analyse one's data and to en-

sure that any subsequent design

does conform to Third Normal Form principles.

Chairman, BCS Database Specialist Group

Secret

desires

TREVOR BARNES

Computer Section Regional Heniti

CACI Ine Intornational,

289 IIlgh Holborn.

Tront

Authority, Fulwood House, Sheffield 810 3TH.

Ratio will

IN your initial article on IBM's

8100 (CW October 12, 1978), I

was quoted as saying that a

cuatomer who used both

operating systems could be

GEOFF HAKER

nal languages need. 2. Being, fortunately, note: This Fourth Normal Form ject to any artificially impressed and standard it is entire actually has all the properties of Third Normal Form. The need to in accordance with the at enalyse one's data prior to implementing any database and experience of practicals rather than being cribbel: management systems has been confined within the bounds recognised for a number of down by an academic com years. The work of ANSI (Interim Report of the ANSI: Incidentally, the exit; which Mr Maddison gives b' note can more efficiently. SPARC Study Group on Database Management Systems.

Superior

to older

dison (Software File, January is correct in asserting that is correct in asserting that is correct in asserting that is correctly possible to gradual tochnically possible to gradual tochnically possible to gradual tochnically possible to gradual tochnically of the latter tanguage makes it deat in whether an Interpretation would be gradually superior to the 1986.

edly superior to the Iradia

compiled versions in that as

He is wrong, however, he

lieving that the superloon;

Basic to these older

languages rests on the exist

Basic, as Implemented:

modern minicomputers &

niterocomputers, is superior

I. It cant, with minimals:

port, he self-taught, a

consuming training paramines which more train

ed an interpreted version.

rivals

1975), the BCS (BCS Data Die-tionary Systems Working Party Report, 1977) and indeed our written in the form 80 N = N-SGN(ABS(X)-X)

### 90 X=A8S(X)

This not only reducer? number of statements by a lutt also avoids the use of GOTO statement which, for a tons not entirely clear lot some academic programm find objectionable. E. W. WATS

Wniford, Herts.

# Computing in schools

IN reply to M. Bridger's take of computing in school (5 January 4), how can his as-"n sound infrastructure of at linter persunnel" be bolke wiffmut computing expert

thiving introduced a second property of the second problem is some second problem in the second problem in the

interested, self-modyated creative as when interested the machine and left with ment. How much mody possible with sequely of hardware and solve to present and at all possible with a counter and a counter and a counter and a counter a counter and a counter and a counter a counter and a counter an examination syllabilistics schools? I am sired strong a losing balls advent of micros E1,000 pupils will get experience in the provided for them.

Our vary limite been a roading!

paying as much for software as for hardware. Of course, fow customers will be using both operating systems, and in fact the price load of announced educationally program products should not fluenced eaverage average much over 15% of sysrough calcula However, I do believe that over a period the software ratio and colleges cost and money which

Please DU

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### THE report by Chad on the secret desires of captains of the secret desires of captains of the computer industry (Decominer 21, 1978), prempts me to effor refuge to CW readers who, like the MD of Plessey Microsystents, play oinclinet or saxophene. The Clarinet And Sexophone Society [CA88] welcomes now members even decisions and subject ches me made? Thiving Introduced a nis welcomes now mambers oven from the computer industry — we're not proud. Firther detells from . . .

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Programmer To program custom bullt systems, which may incorporate standard packaged software, to high standards. Proven expertence of small computers will be preferable;

will be preferable.
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1900 G2

2970

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profitable organisation employing 12,000 stuff at various locations throughout the U.K. The Bottol's Computer Centre, located at Hayes, West London, provides development and operational computer services for the Board's 19 ports and for other port Industry organisations. The Centre line recently completed a major review of the ports' computing ements. To satisfy these requirements, urbaicompoters with visual displays and communication facilities have already been installed at some of the ports and it is anticipated that the Hoard's mainframe computer will shortly be replaced with a none powerful machine with extensive on-line copabilities. In order to support these developments the libural now requires the following senior management staff:

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The Computer Centre is easily accessible from the Mrt motorwicy oud the Western Region British Rall (Hayes and Hurlington Station). Conditions of service include 32 days' (including statutory days) holiday no sumum sick nay scheme, ner and luncheon vauchers (little per thry). Applicants are invited to write to the Porsanne Department, British Transport Docks Board, Melbury House, Melbury Terrace, London NW16JY or telephone Jim Harrawey on.

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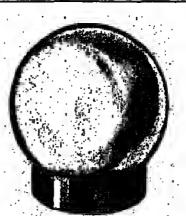


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Meke a Resolution to come to Square One's Open Evening If you are a Programmer or an Analyst with a sound control all background and are looking for a more chillionging career, make a note in your diary to come along and have a best and a chet about what we can other symeons like you.

Monday, 29th January is the data, 4,30 pm-8 pm is the time and 15th Regent Street, London W.1, is the place.

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**SYSTEMS** 

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usage
The post is in the programming
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normally passess a degree, have
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# **SYSTEMS ANALYSTS**

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ATTRACTIVE TERMS include free housing and utilities, senior ex-patriato fringe benefits, cer ellowence and e substential tax-free salary. These are enror appointments.

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Two months traval a year is envisaged to Japan, USA etc, as walf as inside France.

Intel

If you have 2 years or more Assanifice experience, with at least 6

months on Intel hardwarn, and are available to store in this commit weeks, we would like in front from you. To stratify minimulate interviews. The project is based in West London with the opportunity of overseas travel to Europe and the U.S.A.

Wo ere recruiting for an internationally known Software House, who require PROGRAMMERS to help their with an exciting new

il you have the ebevo experience but roquire e longer period of notice we would still like to hear from you, so you may be

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**West London** 

+ Overseas

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Sal.: Neg. + Comm. + Car

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#### **Systems Co-ordinator** Berkshire c£6000 + Car

A large manufacturing company with plants in Great Britain Iroland and throughout Europe, currontly require a SYSTEMS CO-OROINATOR for their European Headquorters in Berkshire

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Experience of 1100 COBOL is one of the more immediate

Fortunately, our client being one of the addest aird most cospected companies in the inflisting can and do obtain fint more than the indicate of their competition. These benefits range from gorinous careur progression to Project responsibility. Salaties + 90 mises are religing to one's contribution to this company send there is the prospect of interesting assignments in the UK anti-royarsums.

As mentional almos we seek candilates with Univac COBOL experience, but the to the execution is base being spread over all the traditional maintaines out along can and will offer able to the politicipal annual compression and the state of apprecia-COBOL on any marchine

# **Programmers & Analysts**

Middlesex/Hertfordshire £6600 p.a.

A Data Processing Department is the fracktone of any successful company, especially if the company is a Multi-Million Portral magnification of Organisation with a furniver in excess of £1,000.

That is why we would like to hear him PROGRAMMERS and ANALYSTS who can become members of the team for the development of new Commercial applications. The installation presently time dual 1900 stander G2 t, but example the continual demand from users, one of the 1900s is shortly to be upopulated as 2000s.

Programmers will med at least 18 months, exponence of Colod knowledge of G2+ and Datadrivu would be an added advantage Analysis will need a Programming harbyround, with 18 months Analysis exponence, although Programmers who wish to advance their career into Analysis will also be considered.

The Company can offer an excellent careur path through to Managenicot, phis the usual benishes of a farge company which includes Staff Shop, Sub-Contoen, Sports Club, Life Assurance and 4 weeks' holiday per year.

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Continual company growth based on the development of external customers systems, quarantees excellent prospects for suitable employees who are properly to work hard.

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Plans for expansion in the services offered by the D.P. Division of a Multi National food manufacturing company, mean that a number of opportunities exist for the right people to achieve setisfaction and advancement in an exciting anvironme

The company requires systems staff in the following eross:

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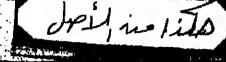
Our cliants a National Tranxport organisation, who have their head office in Swiss Cottage have vecencies for PROGRAMMERS AND ANALYSTS for their Honeywell 88/40 installation running under GCOS end using TDS/IOS

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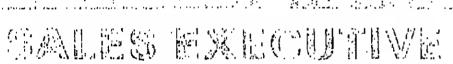
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The Laboratory at present runs a 256K ICL 1904S for scientific esearch work, using both MOP and background. As wall as the terminal configuration, a network of mini computers is connected to the 1804S.

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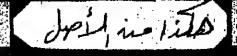
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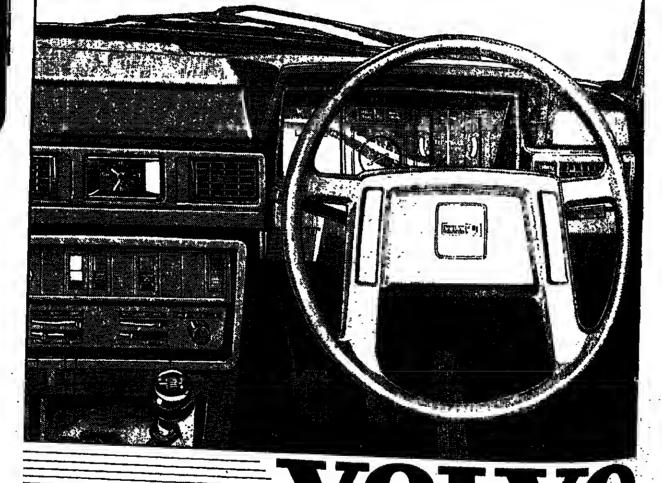
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SYSTEMS ANALYST

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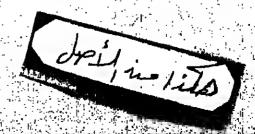
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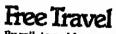
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Salary will be beend on a pedence, but will not be less than £7000.00 per ansum with 5 weeks, holiday.

Please will a explaining how you think you can fulfill the re the job and anglosing a detailed c.v. to: d anciosing a detailer c.v. to. Miss Val Weston, Personnel Hanager

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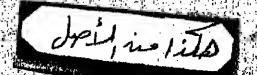
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Combitates, should be sanishly expended opening a manage, we find to be once actively anyolved in a progress installation working formally in a 5-day (we shift specific property of the provided in an advantage, about maning will be provided.

The Joint Computer that growthes the data processing team ments for both Robin and thry Materpolitan Boscoph Co. Cits with a combined population of approximately 440.00 The banks are who has a monthly being reviewed, comprising ICL HIGK (2013) under Frenge 3 supporting a numbrately and remain termosals methodogy 7-67 and 7503 RJE system Input is provided by Bodefon Key to Disc equipment.

Application forms from the Personnal Officer, Town in Bolton Telephone 323 CT Ext. 587 to be returned by 28 January, 1979

# County Council

Computer Installation



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- Do you have expertise in MACRO, CORAL, FORTRAN, or ASSEMBLER
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**1900 Operator** 

**Matthew Hall** 

UNIVERSITY OF LSICESTER

# **OPERATOR**

The Computer Laboratory has a vacantry for an experienced computer operator. The Laboratory gravides the central computing services for the University end essociated Medical School using COC Cyber 72 with e wide range of peripherels end a campus network based on PDP 11s Knowledge of Control Data equipment would be a considerable edvantage, but is not expected. Salary according to ege and experience on a range from £3,074 to £3,774 with an additional £231 a year two-shift ellowance.

Applications should be made to the Otrector, Computer-Laboratory, The University Laborator, LET 28th, bilephone number (0533) 80000, exten-sion 42.

TYNE AND WEAR COUNTY COUNCIL!

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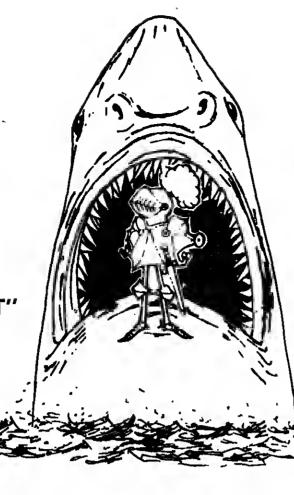
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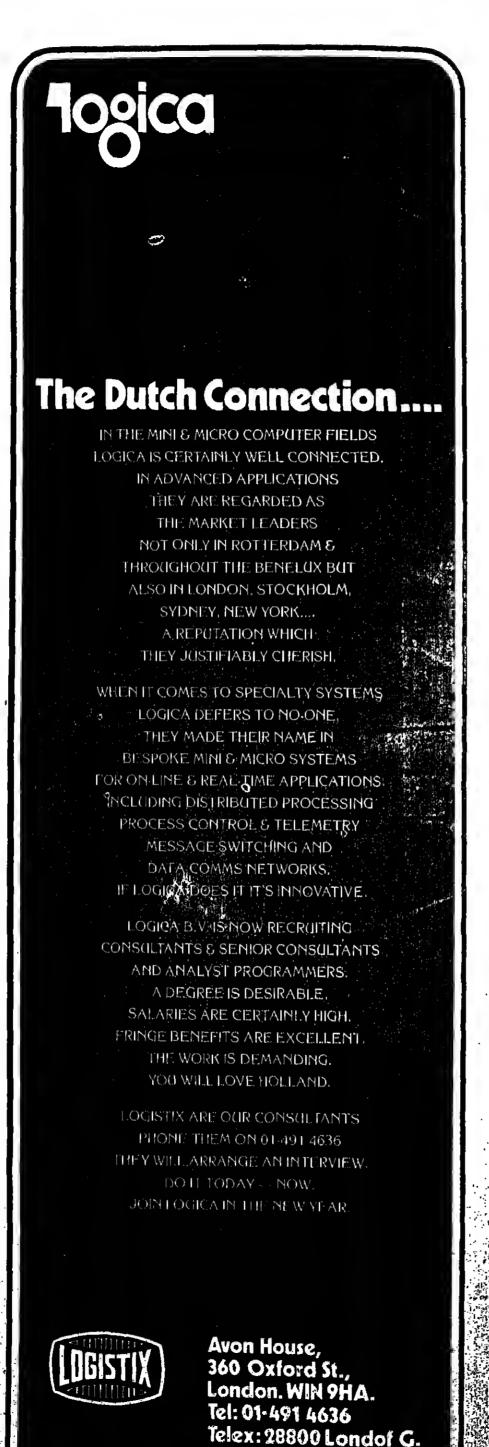
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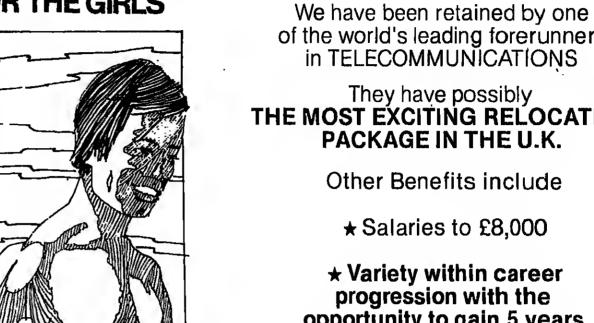
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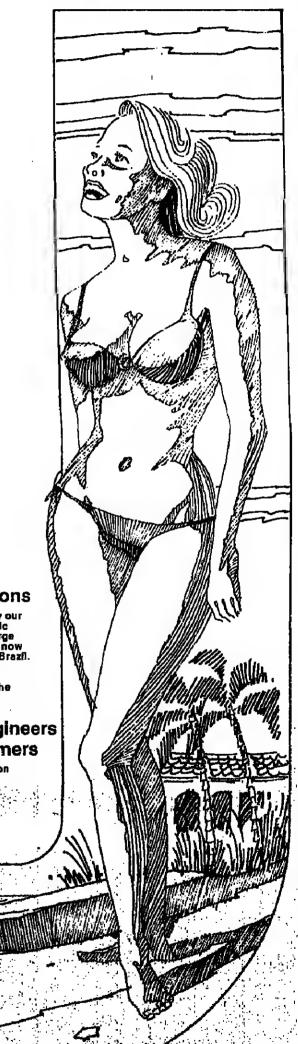
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McKECHNIE METALS LTD., manufacturers of extruded bases in red and section, are seeking a Sentor Systems Analyst for their Computer Capartment. The ideal applicant will be educated to Degree standard and have 8 years D.P. experience with i.C.L. equipment, and have been responsible for at less one major system. He/she will have hed COSOL programming background and on-line experience.

The company currently operates I.C.L. 19917 with 49K sore, 3 a E0080, 2 x mag, tapes and 5 VTs. The successful applicant will be responsible to the D.P. Managar with opportunities to develop in the future. Selary is negotiable and the company offers excellent conditions of employment including enneal bonus and above-everage heliday autidement.

McKechnie Metals Limited

For turther details please write, providing tuil q.v., to: Mr. J. M. O'KELLY Fareonnal Director

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ASHFORD BOROUGH COUNCIL

include a car scheme, 22 or 25 deys ennuel leave (plus 10 statutory holidays),

contributory pension and life assurence

schemes. Assistence with re-location

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A minimum of 10 mogiths prigetical
regeneracy in COBDL is extended with a
regeneracy of PLAN an additional acantage. Systems training will be acchad if nocessary

islary 54773 to \$5073 p.s. tin-hiding selecy supplements.

college conducions of section

t content conducting of between the fuders; 190% removal aspentes. Setting in electronic committee or missance council accommendable is nitiatance with professional less, for house purchased rate in appropriate cases. Casual Car User allowance Abrused Car Purchases Between

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We require 4 to 5 years' mainfreme systems knowladge, hardwere and systems coftware, praferebly IBM 370 serias, but wa will be happy to talk

We can offer a salery of up to £25K × ralocation + car, 4 weeks holiday, and paid time off to attend Garman lassons. Initial training will be in the

In the first instance telaphone us quoting Ref. JMC/4 to errenge en interview.



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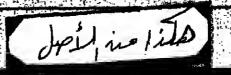
Technically, you should be able to demonstrate a knowledge of block structured high-lavel lenguage. Additional knowledge of low lavel languages; man-machine interfeces and real-time communications procedures would be particularly well received.

Successful candidatas will be sacure in the knowledge of e high salary range and more senior people can now receive the rewards their experience deserves.

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iupport applicutions openly will ion in COBPL and BASIC Filora-ion to 'A' level standard, of repu be required Salary scale -13488 [4107 or [4107-1474] Further details and apple and lorns from the Secretary, Com-puting Centro, Chelago Col-lego, Pulton Placo, Futhoin Broadway, LONGON SWS EPR. Tel. 01-726 1244.

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Computer Centre-Berking

required to work within the Operations Group to control the flow of work through the computer and to menter equipment lot possible malfunction. Candidates should have experience of ICL 1900 series computers and should be educated to 'A' level standard. Inclusive animal selety ranges from £4.51 G to

# **Senior Operator**

required to central the flow of work through the computer in accordance with standard procedures. Applicants must be educated to 'O' loyel standard and professibly have some experience of ICL 1900 series computers. The successful applicant will be expected to work night shifts on a requier basis. Inclusive annual salary ranges from £4,862 to £8,882 according to aga, qualifications, and experience [Ref. A609/78]

For application forms and further datalis contact the Personner Department, North East London Polytachnio, 108 The Grove, Stratford, E.18, telephone 868 6811, axt. Chiefus date: 20th January, 1970.

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North East London Polytechnic

# SYSTEMS MANAGER

### Streatham

From £8,000 p.a.

James Walker (Goldsmith and Silversmith) Ltd., a leading retail jewelfer with over 120 branches and a turnover of cx20M wishes to recruit a Systems Manager to complete a small management team currently drawing up a major lung term development plan.

The successful applicant will be backed by a small computer department and will be responsible for a review of computer hardware, development of new systems from user specification to final implementation, and inamicnance and support of existing systems. A systems analysis background is required, with at least three years experience of commercial accounting systems.

This position offers interesting and varied work, a minimum starting salary of \$8,000 p.a. which could be substantially increased for an exceptional candidate, and real prospects of advancement for the right

Applicants, male or female, should write in complete confidence giving full details f previous experience and current salary to P. Wagstoff, Annan Impey Morrish, . Management Consultants, 40143 Chancery Lane, London W.2., quoting reference 1.860

(A.LM) 

# THE SALES AND MARKETING BIT

COMPUTER WEEKLY, January 18, 1979

# Take your pick— 20 specimen New

formed last year, there awaits the challenge of pro-ving his capability over

This is also the right psychological time for new beginnings in the shape of traditional New Year resolutions. Invariably 19. Never directly behille improvement imply the upplication of greater per- 20. Listen and talk in small discipline — stop accordance with smoking, more exercise, nuture's ratio of two reduce pating and so on.

I would like to propose that this year salesmen add at least one other resolution to thuse they may already have made. This shoul take the form of a persona commitment to apply one or more selling disciplines throughout the coming year which they know they have not effectively applied

During last year this colump has tourhed on a wide range of selling related topics and from them one can generate a wide range of potential New Year resolutions.

Here is a single sentence sununary of some of fast year's articles from which you might care to choose a resolution that you feel is appropriate. Sales managets might everegam some benefit from inflicting a

Throughout the coming year I will definitely:

1. Include Monday morning and Friday afterweek, particularly as far as face-to-face calls are concerned.

2. Pre-plan all my sales

3. Write my call-reports immediately after each

1: Not discuss company

business in public. 5. Apply "vertical marsales activity within my

6. Urge my company to provide on going sales

Identify sales benefits and sell sales advan:

tages.

Always be sure I have Identified the client's problem and agree It

. Maka sure my sales hersignal level. proposals contain no all sales benefits and

2. Analyse all completed

sales negotiations. The HFBR 0010 costs whether won or lost, to: £401.28 from any 114 discover why. sales negotiations. discover why.

dustry jargon, initinis and alibraviations

Make sure I know the rift Sectal memory to the very beginning of every, sales negotia:

Puzzle answer Make my initial sales

contact at managing director level

director level 28774

Year resolutions

responsibility for mis-18. Ask for the order os soon and as often as is

the products of my

ears to one month. Happy New Year!

### PRODUCT NOTES

### No data *formatting* restrictions

-calibration or adustmen by the user has been in stroduced on to the CI

Designated HEBRARIO (b) restrictions and it will operat

The link comprises a trait module and a single fibr connector cable assembly ferent lengths to span a maxi mum distance of 100 metre and tell technical details are

unils and can be mounted directly on to miniature printed circuit boards. But electrical interface signals are

A link monitor is built in: the user when the informa-tion flow is interrupted. An other aystem refinement aulomatic levelling. This

proposals contain no The transmitter module for surprises, but confirm the HFIR-0010 system is an advantages already optical transducer and feaagreed.

10. Apply the "so, what?": circuits and a Gallium tast to all sales benefits. Arsenide Rhosphide light before I present them to clients.

Chalify all presents at data rates up to 10 Mbrs

cognes.

Qualify all prospects thoroughly before committing my company's tor on the module allows easy interfering without problems. interfacing without problem of fibrordetector alignment.

> · Hewlett-Packard Ltd (CW). Kirig Street Line, Winnersh, Wokinghant, Kil H 5AR, Tel. 0734 784774

Applications are invited for this key senior management position in the Computer Services function of Gretian, e lesding independent meil order compeny with e total steff of 5,000.

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The position reports to the Manegemeni Services Meneger, has immediate colleegues in the Computer Menegere—Systems/Programming and Operations, and has 8 Systems Controllers as direct aubordinstas.

-You will ideally have acquired specialist computer end line menegement experience in large commercial organization(s) end be euccessfully performing et e senior management level. You may be e Director of e softwere house or heve senior consultency experience. You will certainly understend the Importence of cost justification in computing, here e knowledge of current computer iechnology end e keen ewareness of business planning end eysiame. Eeseniielly you will possess the intellect and pereonal ettributes to menege this specielist function in e feet-chenging business environment.

The installation - ICL 2960, IBM 370/138 and a developing network of DEC PDP 11s. Mein epplicatione presently ere order processing end

How to apply — Diel the operator and ask for Freephone 5092, and when connected David McKechnie, Managemeni Services Manager, OR write, encioeing brief cereer deteils to:

Howerd Whiteley, Group Personnei Servicee,

Gretien Werehouses Ltd. Anchor House, ingleby Road, BRADFORD SD99 2XG.

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Wa are looking to: a Systems Analyst with savarel years experience, prafarably with a programming background ideally in a similar sized organisation. We offer in return en attractive salery and benefits with the opportunity to further your carear in a good anvironment. Generous islocation assistance will be given if appropriets.

For lurther information ring Mika Gatherar (DP Manegar) or Satty Winter on Loughborough 68181, or write for application form to: Personnal Department,

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The Job:

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The Computer department consists of 36 staff IN THE USE HELL LAND TO DESIGN FOR GROUPS SEEN THE TOTAL SEED OF S with IC1 7500 corns terminal equipment.

The work covers the Programming and +

Operational asperts of the Build and includes: • manuferrance of exciting systems,

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• implementationeret au IIIMS Databasosystem planning for lature requirements.

 applicante should have relevant management preparation of and should also have expenses of System . work Programming and Complier

 a knowledge of ICU Hardware and Soltware would be a distroct advardage

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Salary 1.8 000 plos, depending on experience ac Luncheon Vone hers 1 (30 per annum, #23) days parel to diday per annual • Pleasant working missiparatent • Live Car Parking, • Relocation uxpenses may also be available.

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Telephone Mr. G. R. Oldfield on Watford 44322. Extension 31 for an informal chat end further denails, or write for an application form to:-Mr E.T G. Shuldham. Sanior Personnel Officer Engineering Industry Training Board, 41 Clarendon Rond WatInril, Hertfordshiro, WD11HS.

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This new monagement position letter part of the Computer Development Department at the Computer's Bond Dilect Key objectives of the Department are its reduces costs and ingress management information computer with the Computer as well range of headware from International development of the Propert London, white reported opening in the Propert London, with reported opening in the Propert London, with reported opening in the properties of computer development from tended strong the headware from a substantial opening in the control of the properties of subsequent system undertained Hopening in the control of the control of the properties of the control of the

appointment curtus an other for employment package write alf the usual traige benefit of a lantial company. BICM Silcark is part of Unitone and is the healing force animal feet ross to the United Kingdom, with white dispersional activation.

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Cardidates interested in Johnny us should send bild. hin comprehensive, personal and career distribute (including salary) in ibinik (actolite) salary) ia Alan Caatos Siaff Personnol Manapor SOCM Blicack Limited Basing How Sasingstoke Hampshira Tel: 28211, ext. 376.

Weet Yorkehire Metropoliten County Council Engineering Services Unit

### ANALYST/PROGRAMMERS POST REFS ES19003, ES19016, ES19022 (3.POSTS)

AP3/So2 £3732-£6080 (including supplement)

The Directorals has its own computer group and uses half the capacity at the County left 370/168 (VM370 + CMS + OS/V61 + CICS). About 30 terminals and 4 R6Ts their byte the computer graphics.

proposed anginosring, mainematics and computer science graduates produces considered in programs for highways, structures, traffic, transportation, planning and engineering mainematics. A senter officer post (SO1/SO2 £5232 £6080 including supplement) systics corporate member of SCS at CEL with autificiant computing expertance to help a hard-pressed near leading and production schedule.

There are two intermediate-level posts (APS/SO2 £4773 £5060 trictuding supplement) within the experienced analyst programmers who have passed as obtained exemption from 8£5 part.

Application forms and further datets from Oiractorate of Planning, Engineering and Talenthia, Room 238, County Hell, Waketlaid, to be returned by 5 February 1979.

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Those experience over 2 years A years Hyears Honger Me present salary is in the range. - 1400-4500 - 14500-5000 - 115000-5500-1 [Higher Please tick affirmation

A vennet phone No

Addies

# Are you a Systems Analyst looking for alittle seniority?

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This job requires skill, ambilion and initialize, but the rewards are high-salary up to £8500 p.a plus company benefits Promotion prospects are excellent-we would like to see you become one of our Systems and Programming Project Managers in the near

So if you think you can meet out challenge, ring fan Gold on 01 388 0036 for more delails Frase: Williams (London) Ltd., 38 Watten

# **Computer Consultants** LONDON - LIVERPOOL - MANCHESTER - 8IRMINGHAM - SHEFFIELD - GLASGOW - TORONTO

ISLE OF WIGHT COUNTY COUNCIL

### **Systems Analyst** SO1 £5,232-£5,568 (Including supplement)

Applicante must have proven expetience of system design, a sound working knowledge of OOS/VS, V8AM, CICS/V8 an advantage, and RPG ji background...
The installation is an IBM 370/118 128K with Disks and Tapes with blenned upgrading to 266K.

Newport is the centre of the latend within easy leach of the sea and countryside in all directions.

Assistance is given with reproval expenses,

Application form and job description from the Personnel Officer, Country Hall, Newport, IW PO30

1UD, Closing date 31 January 1878.

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FIFE REBIONAL COUNCIL FINANCE DEPARTMENT

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Selaryi £3933/£4461 plus £312 sup.

Qualification required. - st

The Region has an ICI, 1903A configuration, but this will shortly be replaced by an ICI, 2960. A wildly voristy of work is undertaken and career prospects are excellent.

Application form (returnable by 29.1.79) and buther informellon look Regional Personnal Officer, Fife Rouse, North Street, Gledrothes (Tel. Glenrothes 754411, ext. 245/6), Piesse quote reférence RF/49/442/CW.

THE UNIVERSITY OF LANCASTER COMPUTER GERVICES

Brieflad at Make Sollowing State

A Programming information Officer (Admin. Grado 18) Salary scala: £3384-£5804

The successful applicant will have experience in programming, particularly in higher-level language and will be appected to satist users at all feeds, in the uses well as available compliant resources. The job involves evening documentation, some lecturing, advanty work and programming. A degree or equipaliting qualification is

A Systems Programmer (O.R. Grade 1A) Selary scale: £3583-£5555

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## Because of

HEX KID

COMPUTER WEEKLY, Jenuary 18, 1979

oircumstances beyond our control, we regret that HEX KID has had to be left out this week

> He will be back!

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